

Wisconsin SCORP

Regional Demographic Profile

Lake Winnebago Waters



Applied Population Lab and Wisconsin Department of Natural Resources

*Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us*



Preparation of this report and the collaborative research by the Wisconsin Department of Natural Resources, Bureau of Parks and Recreation and the University of Wisconsin - Madison Applied Population Lab was financed in part through a planning grant from the National Park Service, Department of Interior, under the provisions of the Land and Water Conservation Fund act of 1965
(Public Law 88-578, as amended).



Applied Population Lab and Wisconsin Department of Natural Resources

*Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us*



TABLE OF CONTENTS

About this Report	IV
Executive Summary	V
Existing Conditions	
Population Distribution	1
Urban/Rural	3
Housing Distribution	4
Seasonal Housing and Tourism	6
Demographic Characteristics	9
Historical Perspective	17
Population Change	17
Age Structure	20
Net Migration by Age	21
Urbanization	22
Minority Groups	23
Housing Development	25
Seasonal Housing	29
Natural Amenities, Recreation and Population Change	30
Future Trends	32
Population Projections	32
Projected Population Change, 2000-2020	34
Age Projections	35
Conclusions	36



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: *Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us*





ABOUT THIS REPORT

The following is a demographic profile of the Lake Winnebago Waters SCORP Region completed by the Applied Population Laboratory, University of Wisconsin- Madison. This profile was created to inform the 2005-2010 SCORP planning process by providing demographic background information for understanding the context within which outdoor recreation occurs. Similar demographic profiles are provided for each of the eight SCORP Regions, and one summary profile for the state of Wisconsin compares Region to Region.

The profile includes current, past and projected information on population demographics and housing within the Lake Winnebago Waters Region. Data are displayed in maps, tables, and charts and summarized briefly in text. We begin by painting a demographic picture of the current conditions in the Region using data from Census 2000 and from the Wisconsin Department of Administration's Population Estimates (2004). Next, we address historical trends that have shaped the Lake Winnebago Waters Region over the past several decades. We include information on how the population has been changing over time, where housing development has been rapidly occurring, and the impact that natural amenities may have on these changes. Finally, we use population projections from the Wisconsin Dept. of Administration to discuss how the population of the Lake Winnebago Waters Region might change over the next several years.

It is important for planners to consider demographic information when planning for outdoor recreation because characteristics of the population impact demand for different types of outdoor recreation. For instance, areas with growing populations may experience increasing demand for recreational resources, and areas with aging populations may demand different types of resources than those with young populations. Similarly, income, education, race, and sex have all been shown to affect preferences for outdoor recreation.

Starting in 1999, the Wisconsin DNR initiated a three-year study to identify, with considerable input from the public and non-profit groups, places in the state that will be critical in meeting Wisconsin's long-term conservation and recreation needs. The resulting 229 "Legacy Places" collectively are the special places that "make Wisconsin Wisconsin." The WDNR only represents the Legacy Places as points because specifically identifying which lands and waters associated with each place are most appropriate to maintain and protect is most appropriately left to a locally-focused planning process. The Legacy Places are represented on many of the maps that you will see in this report. The points noted with a star in the center are Legacy Places that the WDNR has determined to have particularly high recreation potential. The Land Legacy information helps to bring cultural and environmental meaning to the demographic data that we present.

The principal author of this report is Richelle Winkler (rwinkler@ssc.wisc.edu) of the Applied Population Laboratory, with direction provided by Jeff Prey (Jeff.Prey@dnr.state.wi.us) of the Wisconsin Department of Natural Resources. With appreciation and thanks, the author would like to acknowledge the insight and assistance provided by Chris Whelpley, David Long, Bill Buckingham, Dan Veroff, Nick Fisher, and Don Field. Each lent their skills and talents in preparing data, constructing tables and charts, formatting, and editing text. For more information about this report, the authors can be contacted via email.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





EXECUTIVE SUMMARY

The Lake Winnebago Waters Region is located in the south-central part of the state and encompasses Calumet, Fond du Lac, Green Lake, Marquette, Menominee, Outagamie, Shawano, Waupaca, Waushara, and Winnebago Counties. Population is concentrated around Lake Winnebago and especially in the cities of the Fox River Valley including: Appleton, Oshkosh, Kaukauna, Neenah, and Menasha. The western and northern parts of the Region remain mostly rural.

- In 2004, the Lake Winnebago Waters Region had an estimated population of 633,581 residents. Outagamie and Winnebago are the most populated counties, housing approximately 52% of the Region's residents.
- The population of the Lake Winnebago Waters Region is mostly urban (about 61%). The majority of population growth and housing development over the last fifty years has been occurring in the Fox River Valley. Subsequently, the countryside in Outagamie, Winnebago, and Calumet Counties has largely been urbanized.
- 94% of the population is Non-Hispanic and White. Hispanics and American Indians each make up about 2% of the Region's total population.
- Forests and lakes attract seasonal residents and tourists to the Lake Winnebago Waters Region and to Menominee, Waushara, Marquette, and Green Lake Counties in particular. Tourism-related employment is especially important in Menominee and Shawano Counties.
- Migration trends vary within the Lake Winnebago Waters Region. Families with children tend to in-migrate to the more populated counties in the Region (Outagamie, Winnebago, and Calumet). In rural and natural amenity-rich counties, young people tend to out-migrate and retirees tend to in-migrate. This balance of migration produces an overall age structure in the Region that resembles the state average. The youngest county is Menominee, with a median age of 28 years. The oldest county is Waushara, with a median age of 42 years.
- Housing values and college education rates are relatively low in the Lake Winnebago Waters Region, while incomes are slightly above the state average. Calumet, Outagamie, and Winnebago Counties have the highest education rates, median incomes, and median housing values; while Menominee, Shawano, Marquette, Waushara, and Green Lake Counties have the lowest.
- Population in this Region has been growing since at least 1950, increasing by 72% between 1950 and 2004. Calumet, Outagamie, and Winnebago Counties have grown at a particularly quick pace.
- Housing development has been occurring at a faster rate than population growth. Between 1950 and 2004, the number of housing units in the Region increased by 145%.
- According to Johnson and Beale's recreation county classifications, Green Lake, Marquette, Menominee, and Waushara Counties have many recreation-based resources and high demand for recreation. Because of these resources, these counties might be expected to experience population growth and housing development at a disproportionately fast pace.
- Population is projected to continue to increase in the Lake Winnebago Waters Region over the next several years, especially in Calumet, Menominee, and Outagamie Counties. Outagamie County is expected to add 30,108 residents between 2004 and 2020, for an increase of 18%.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





POPULATION DISTRIBUTION

According to the Wisconsin Department of Administration population estimates (WDOA 2004), 633,581 people live in the Lake Winnebago Waters Region. This amounts to 114 persons per square mile.

Figure 1 shows population distribution for the Lake Winnebago Waters Region by county. Most of the people in the Region live in Outagamie or Winnebago County. Together, these counties account for about 52% of the population in the Region. Population is concentrated in the Fox River Valley, southwest of Green Bay and extending south along the west shore of Lake Winnebago. Communities in this area include Appleton and Kaukauna in Outagamie County and Oshkosh, Neenah, and Menasha in Winnebago County.

Figure 1
County Population Distribution, 2004

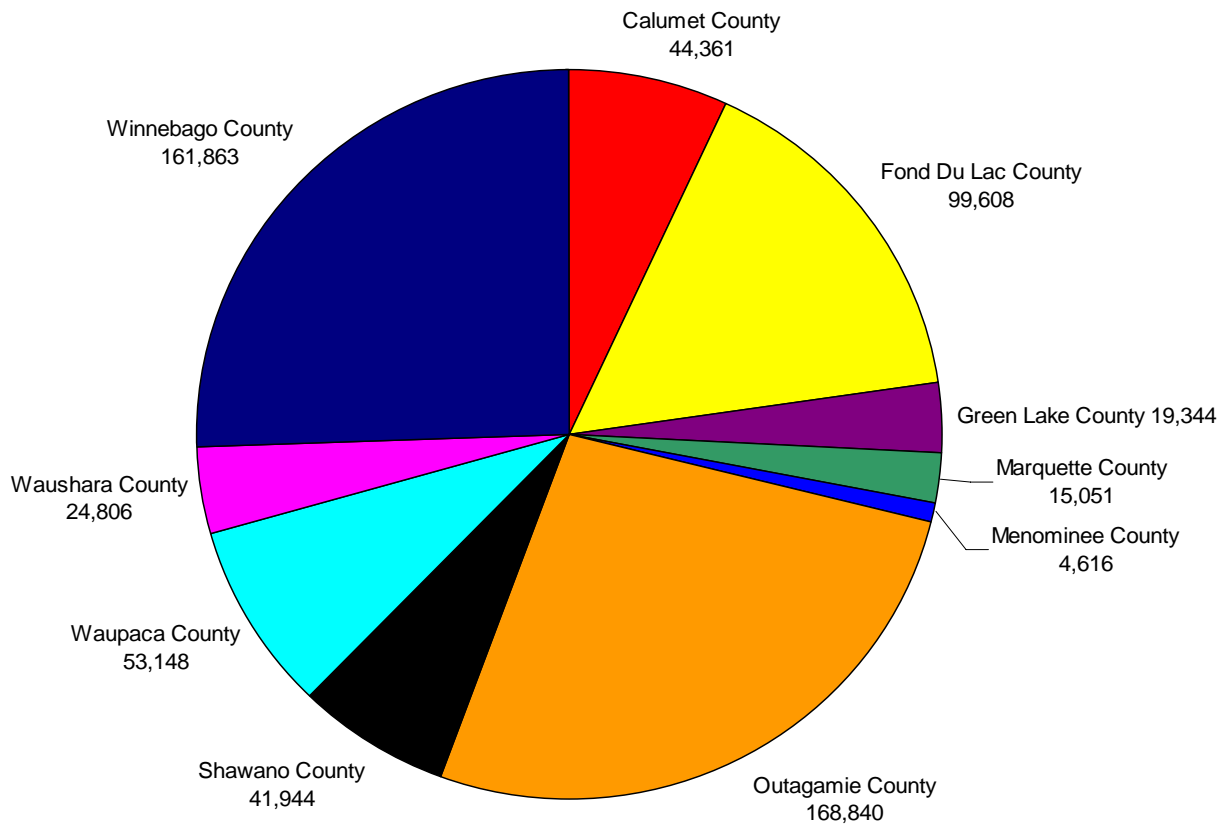


Figure 2 shows population density by municipality (cities, villages, and towns). This view allows us to see variation within counties. Population densities are high around Lake Winnebago, particularly in the Fox River Valley on the north side of the lake. The western portion of the Region is made up of relatively low population density towns, scattered with small cities and villages that have higher population densities. The eastern part of the Region is somewhat different, with most towns having higher population densities suggestive of sprawl.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us

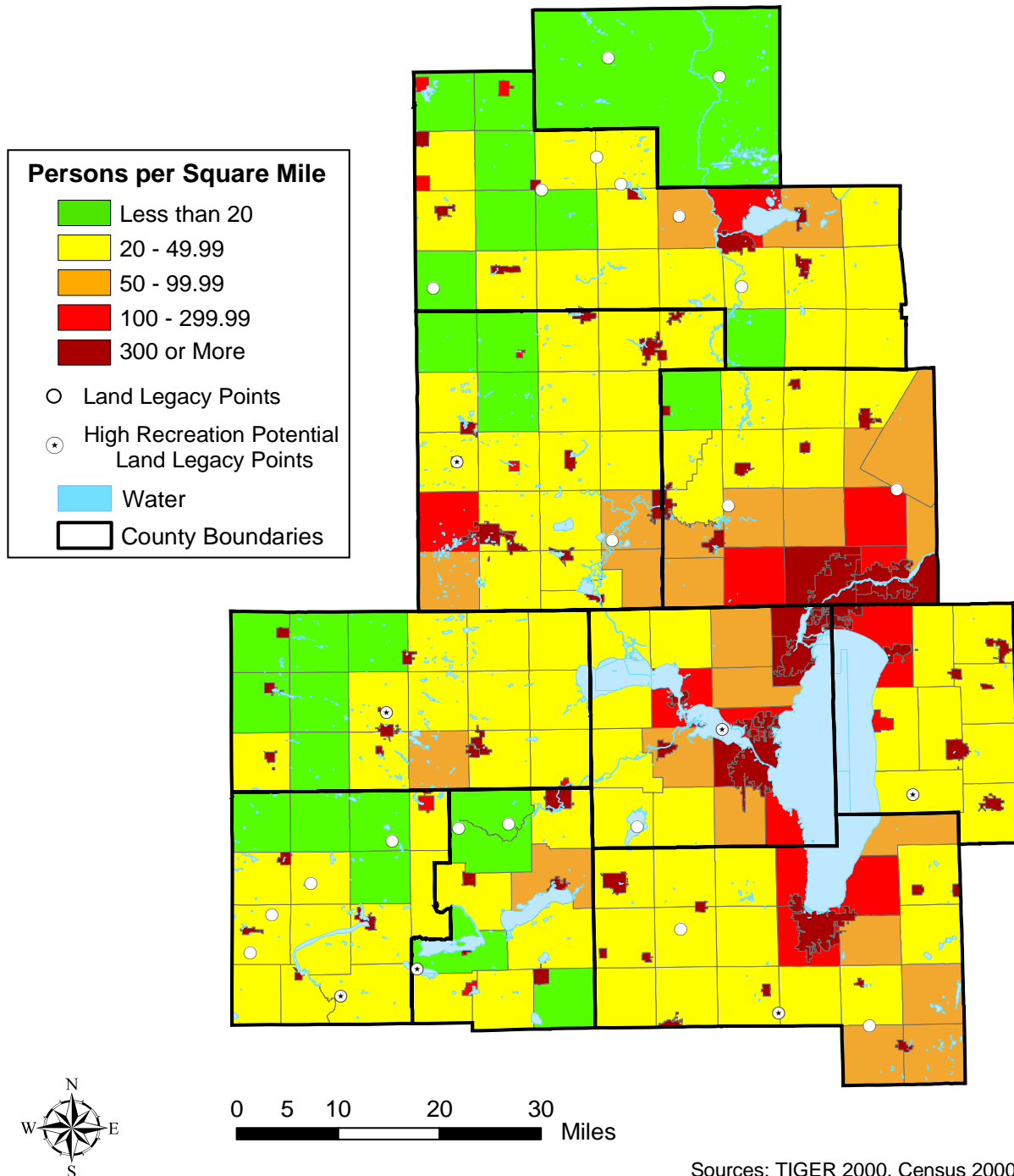




Figure 2

Population Density, 2004

Calculated at Municipal Level



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





URBAN/RURAL

Most people in the Lake Winnebago Waters Region (61%) live in urban areas, according to Census 2000 definitions. This includes people who live in densely settled territory with a population of 2,500 or more.

Table 1 shows the proportion of people living in urban places by county for the Lake Winnebago Waters Region. Winnebago and Outagamie Counties are particularly urban, while Menominee, Marquette, and Waushara Counties remain almost entirely rural.

Table 1
Urbanization in the Lake Winnebago Waters Region, 2000

	Total Population	Urban Population	Percent Urban
Calumet County	40,631	24,509	60.3%
Fond du Lac County	97,296	60,375	62.1%
Green Lake County	19,105	4,798	25.1%
Marquette County	14,555	0	0.0%
Menominee County	4,562	0	0.0%
Outagamie County	160,971	119,337	74.1%
Shawano County	40,664	9,449	23.2%
Waupaca County	51,731	19,120	36.9%
Waushara County	23,154	68	0.3%
Winnebago County	156,763	131,941	84.2%
Lake Winnebago Waters Region	609,432	369,597	60.6%

Source: Census 2000, Summary File 1

Note: Population in Adams and Marquette Counties have been corrected from a Census misallocation.

Corrected according to WDOA.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





HOUSING DISTRIBUTION

Housing development impacts both the supply and the demand for outdoor recreation. Housing affects the *supply* of outdoor recreation resources by taking up land that may previously have been considered to be recreational or have potential for recreation activities. Outdoor recreation (especially those activities that require a substantial amount of open space, like backpacking, ATV riding, or hunting) is largely considered incompatible with higher density housing development.

Housing development also impacts *demand* for outdoor recreation. At the most basic level, housing development in an area generally means more people in that area who are likely to participate in some form of recreation activity nearby. In this way, housing unit counts inform outdoor recreation planners similarly to population counts.

Examining housing is especially useful to recreation planners because population counts do not include seasonal residents. Seasonal residents are an important component of demand for outdoor recreation in Wisconsin, and looking at housing development (including both permanent and seasonal homes) can offer a more complete view of where demand for outdoor recreation occurs than looking at population distribution alone.

Figure 3 shows the 2000 distribution of housing density in the Lake Winnebago Waters Region by Census Block Group. The map looks similar to the population map presented above.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us

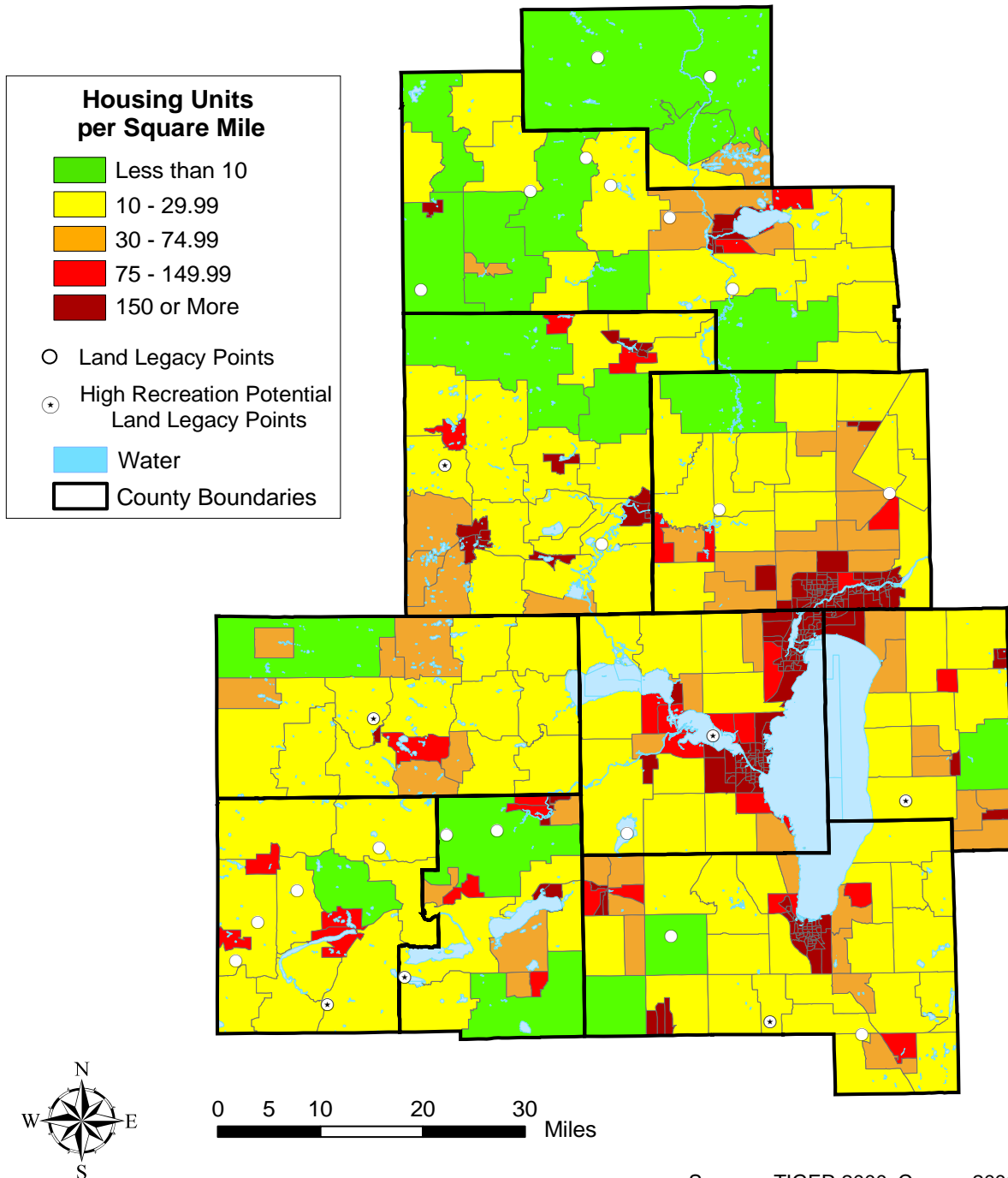




Figure 3

Housing Density, 2000

Calculated at Block Group Level



Sources: TIGER 2000, Census 2000



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





SEASONAL HOUSING AND TOURISM

Area residents constitute much of the demand for outdoor recreation, but a certain amount of demand also comes from non-residents, like seasonal home-owners and tourists. Table 2 shows the importance of seasonal housing and tourism in the Lake Winnebago Waters Region. Seasonal housing is an important component of demand for outdoor recreation in Menominee, Waushara, Marquette, and Green Lake Counties.

Measuring the number of tourists who visit the Lake Winnebago Waters Region is more difficult because good data is not readily available. Table 2 shows the percent of all workers age 16 and over who are employed in arts, entertainment, recreation, accommodation, and/or food services industries. We provide this employment measure with the idea that the more tourists who are visiting an area, the more people will be employed in tourism-related work. Tourism-related employment is particularly important in Menominee County.

Table 2
Seasonal Housing and Tourism in the Lake Winnebago Waters Region, 2000

	Population	Housing Units	% Seasonal	% Employed in Tourism
Calumet County	40,631	15,758	1.8%	5.0%
Fond Du Lac County	97,296	39,271	1.5%	6.3%
Green Lake County	19,105	9,831	14.5%	7.0%
Marquette County	14,555	8,664	26.2%	9.6%
Menominee County	4,562	2,098	32.7%	25.8%
Outagamie County	160,971	62,614	0.4%	6.5%
Shawano County	40,664	18,317	9.8%	10.2%
Waupaca County	51,731	22,508	7.5%	6.5%
Waushara County	23,154	13,667	27.0%	7.5%
Winnebago County	156,763	64,721	1.6%	7.0%
Lake Winnebago Waters Region	609,432	257,449	5.3%	6.9%

Source: Census 2000, Summary File 1

Figures 4 and 5 show the distribution of seasonal housing and tourism at the Census Block Group level. Seasonal housing is clustered around the lakes in southwest Menominee County, around the lakes in Green Lake County, and throughout Waushara and Marquette Counties. Tourism-related employment is particularly important throughout Menominee County (where casino-related employment and water recreation on the Wolf River make up a significant portion of the local economy) and in parts of Shawano County.



Applied Population Lab and Wisconsin Department of Natural Resources

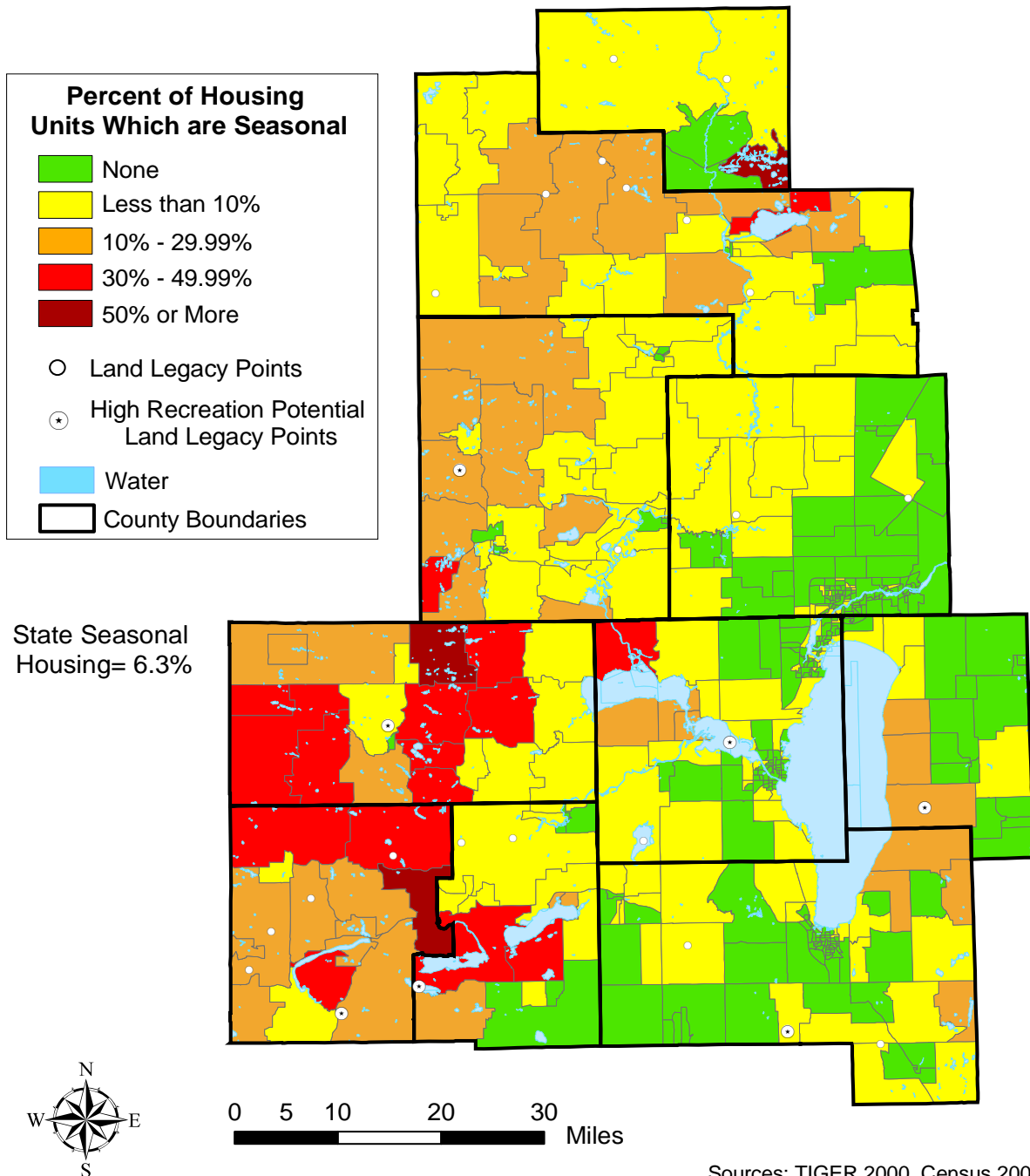
Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Figure 4

Seasonal Housing Calculated at Block Group Level



Applied Population Lab and Wisconsin Department of Natural Resources

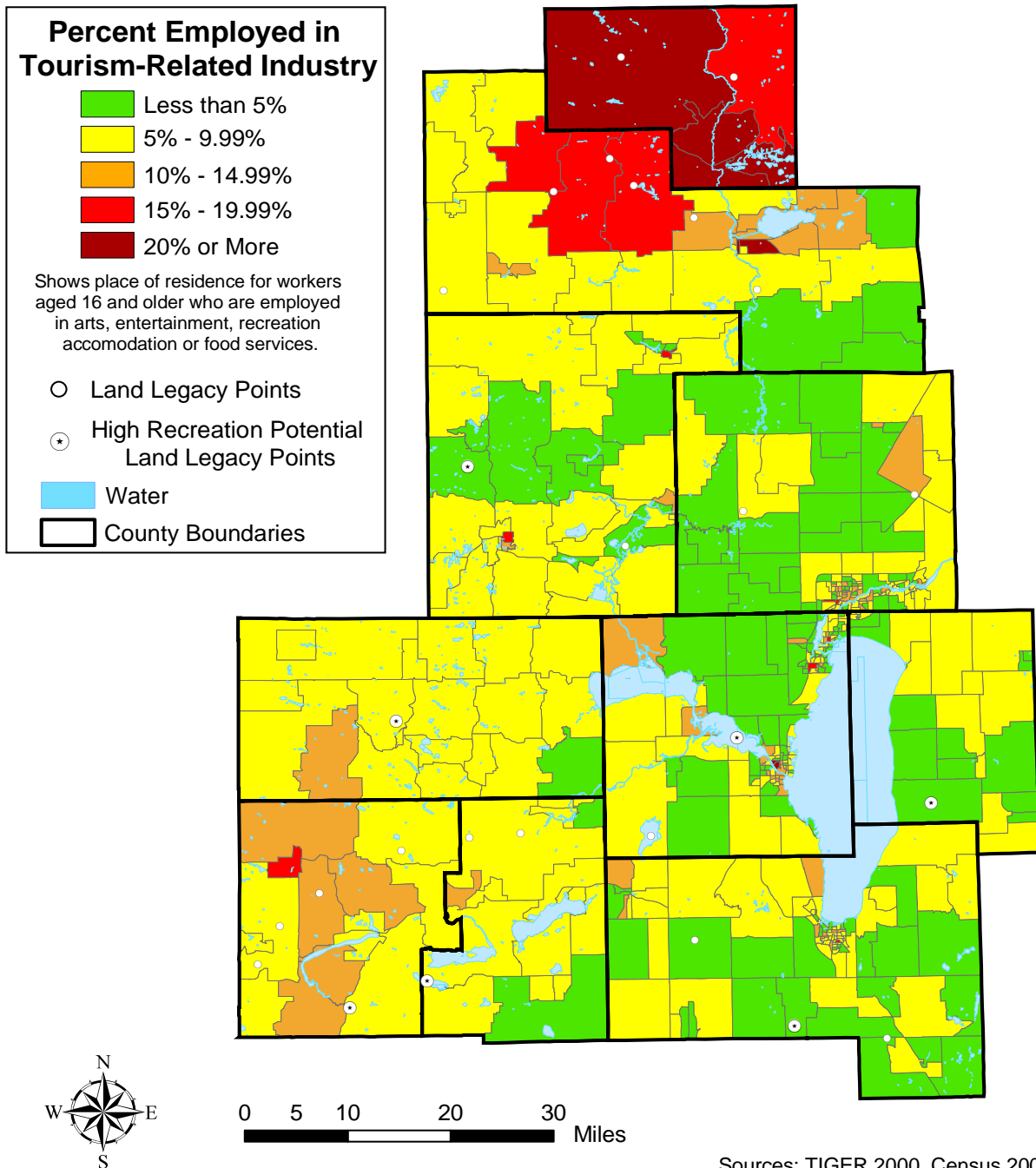
Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Figure 5

Tourism Industry Employment Calculated at Block Group Level



Sources: TIGER 2000, Census 2000



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





DEMOGRAPHIC CHARACTERISTICS

Social and economic characteristics of the population also influence participation in outdoor recreation. For instance, older people tend to participate in different recreational activities than young people; income may influence ability to participate in particular outdoor activities, like golfing; and education may have something to do with whether or not someone engages in nature study. These types of social and economic characteristics of the population vary across space. Near urban centers, people tend to make more money; near universities, people tend to be younger and more highly educated.

Table 3 provides a summary of social and economic characteristics by county. Figures 6-11 show how these characteristics vary across space.

Table 3
Demographic Characteristics in the Lake Winnebago Waters Region

	Total Population	Median Age	Female	College Educated	Hispanic	American Indian	Asian	Black	Median HH Income	Median Housing Value
Calumet County	40,631	35.2	50%	21%	1.1%	0.3%	1.5%	0.3%	\$52,569	\$109,300
Fond du Lac County	97,296	36.9	51%	17%	2.0%	0.4%	0.9%	0.9%	\$45,578	\$101,000
Green Lake County	19,105	40.9	51%	14%	2.1%	0.2%	0.3%	0.2%	\$39,462	\$90,100
Marquette County	14,555	40.9	n/a	10%	n/a	n/a	n/a	n/a	\$35,746	\$87,000
Menominee County	4,562	27.7	51%	13%	2.7%	87.3%	0.0%	0.1%	\$29,440	\$72,700
Outagamie County	160,971	34.4	50%	23%	2.0%	1.5%	2.2%	0.5%	\$49,613	\$106,000
Shawano County	40,664	38.5	50%	13%	1.0%	6.3%	0.3%	0.2%	\$38,069	\$84,000
Waupaca County	51,731	38.5	50%	15%	1.4%	0.4%	0.3%	0.2%	\$40,910	\$89,300
Waushara County	23,154	42.1	50%	12%	3.7%	0.3%	0.3%	0.3%	\$37,000	\$85,100
Winnebago County	156,763	35.4	50%	23%	2.0%	0.5%	1.8%	1.1%	\$44,445	\$97,700
Lake Winnebago Waters Region	609,432	36.4	50%	19%	1.9%	1.8%	1.4%	0.7%	\$44,983	\$97,700

Source: Census 2000

Note: Regional "medians" represent the weighted average of constituent county medians;

Percent college educated calculated for persons age 25 and older; Housing value is calculated for owner occupied housing units.

Sex and race information is not available for Marquette County because of a Census 2000 misallocation. These data are not included in Region Summaries.

In comparison with other Regions, the Lake Winnebago Waters Region has an average-aged population. Median age for both the state of Wisconsin as a whole and for the Lake Winnebago Waters is 36 years. Still, there is much variation within the Region where median age ranges from a low of less than 28 years in Menominee County to a high of more than 42 years in Waushara County.

Sex and race are two more important demographic characteristics that might impact participation in outdoor recreation. In terms of sex ratios, the Lake Winnebago Waters Region has an equal proportion of females and males. Racially, the Region is predominately (94%) non-Hispanic and White. Hispanics and American Indians each make up about 2% of the Region's total population. Waushara and Menominee Counties have the highest proportions of Hispanic residents. American Indians make up the vast majority of the population in Menominee County (a reservation for the Menominee Nation).



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Housing values and college education rates are relatively low in the Lake Winnebago Waters Region, while incomes are slightly above the state average. Median housing values are highest (though still below the state median) in Calumet, Outagamie, Fond du Lac, and Winnebago Counties. On the other hand, values are particularly low in Menominee, Shawano, and Waushara Counties. College education rates are above the state median (22%) in Outagamie and Winnebago Counties, but well below the state median in Marquette, Waushara, Shawano, Menominee, Green Lake, and Waupaca Counties. Calumet County stands out with the highest median income in the Region. In addition, Outagamie, Winnebago, and Fond du Lac Counties each have relatively high median incomes. Menominee County has a particularly low median income.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: *Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us*





Figure 6

Hispanic Population Calculated at Block Group Level

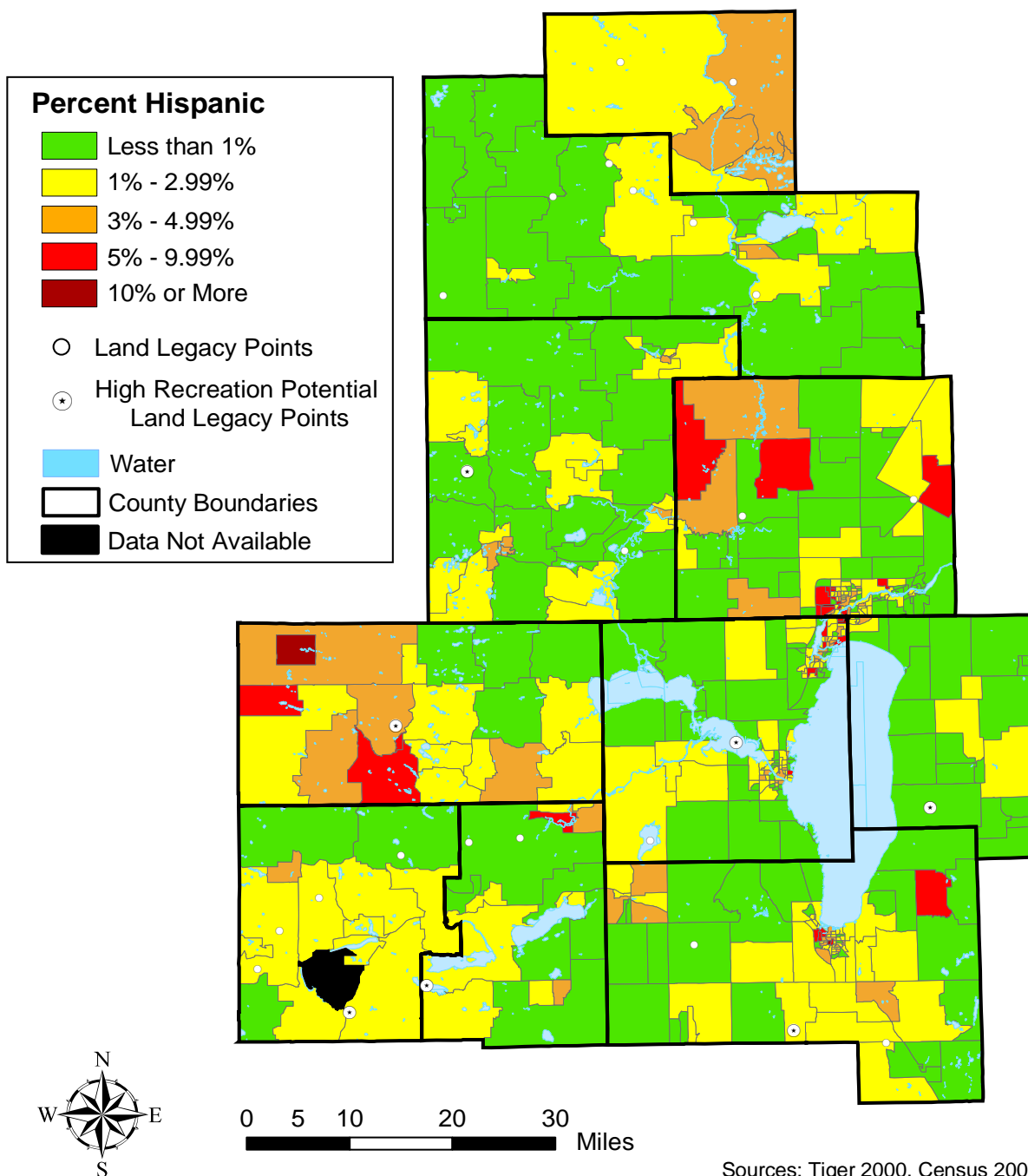
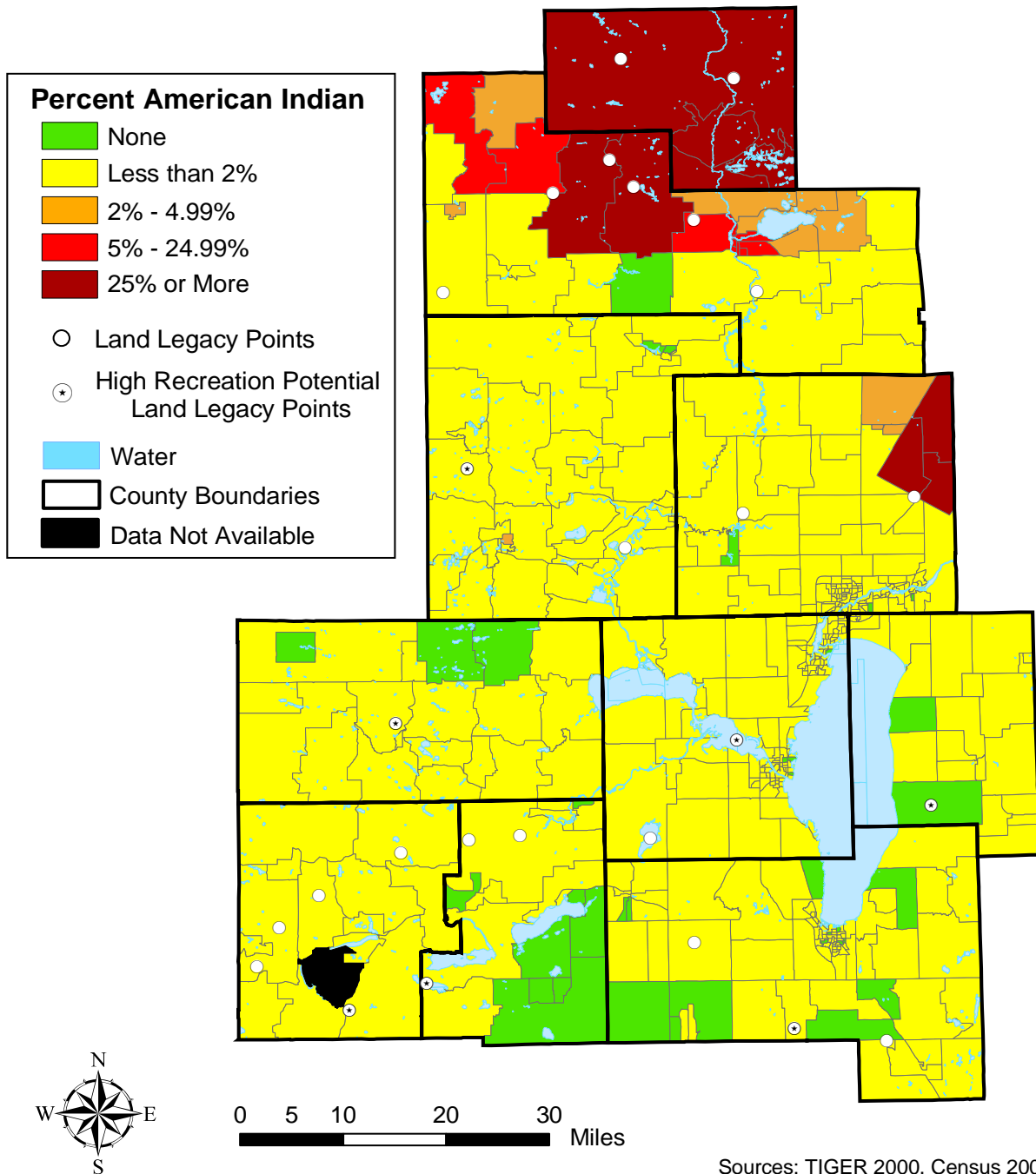




Figure 7

American Indian Population Calculated at Block Group Level



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us

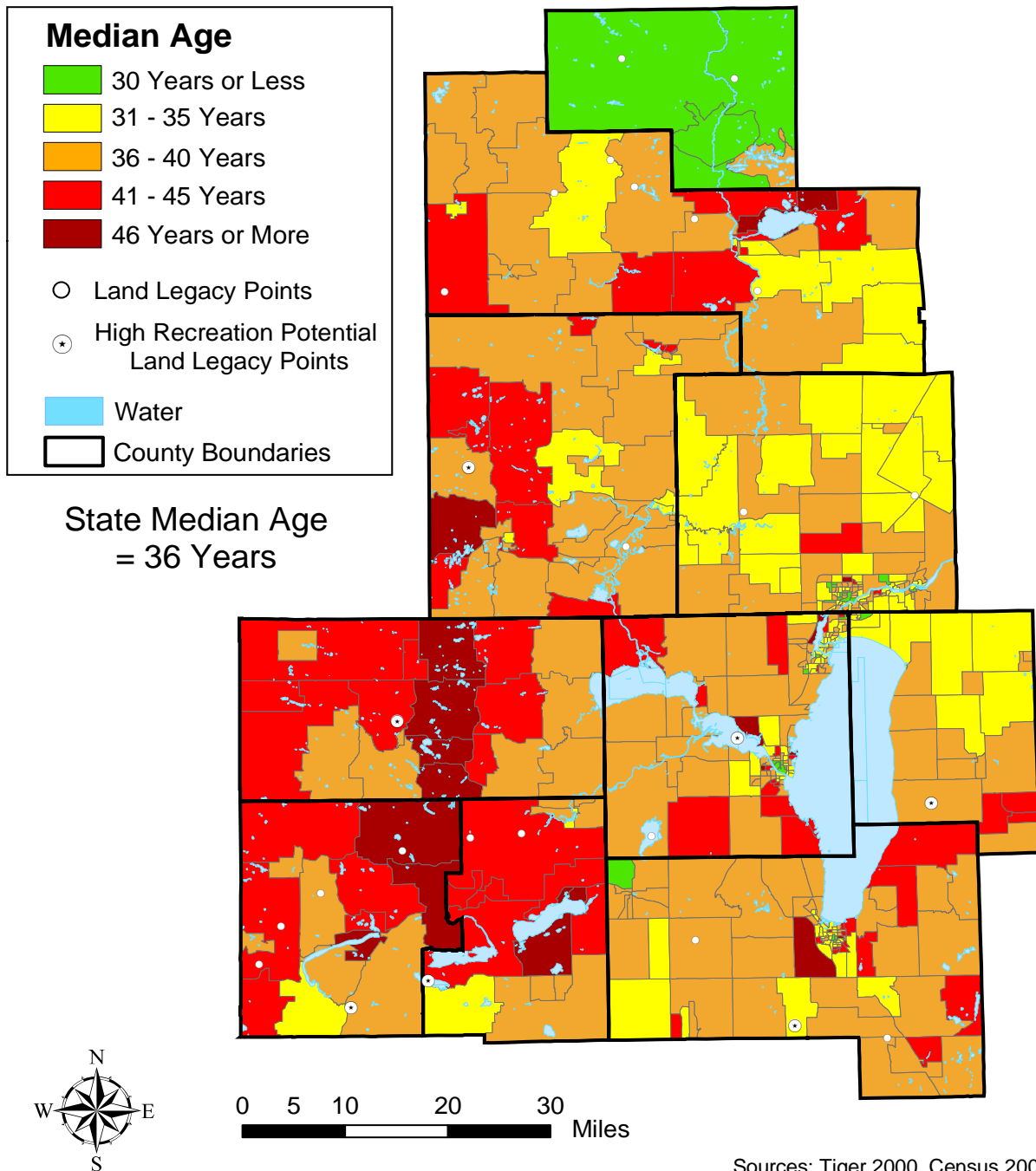




Figure 8

Median Age

Calculated at Block Group Level



Sources: Tiger 2000, Census 2000



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Figure 9

Median Income Calculated at Block Group Level

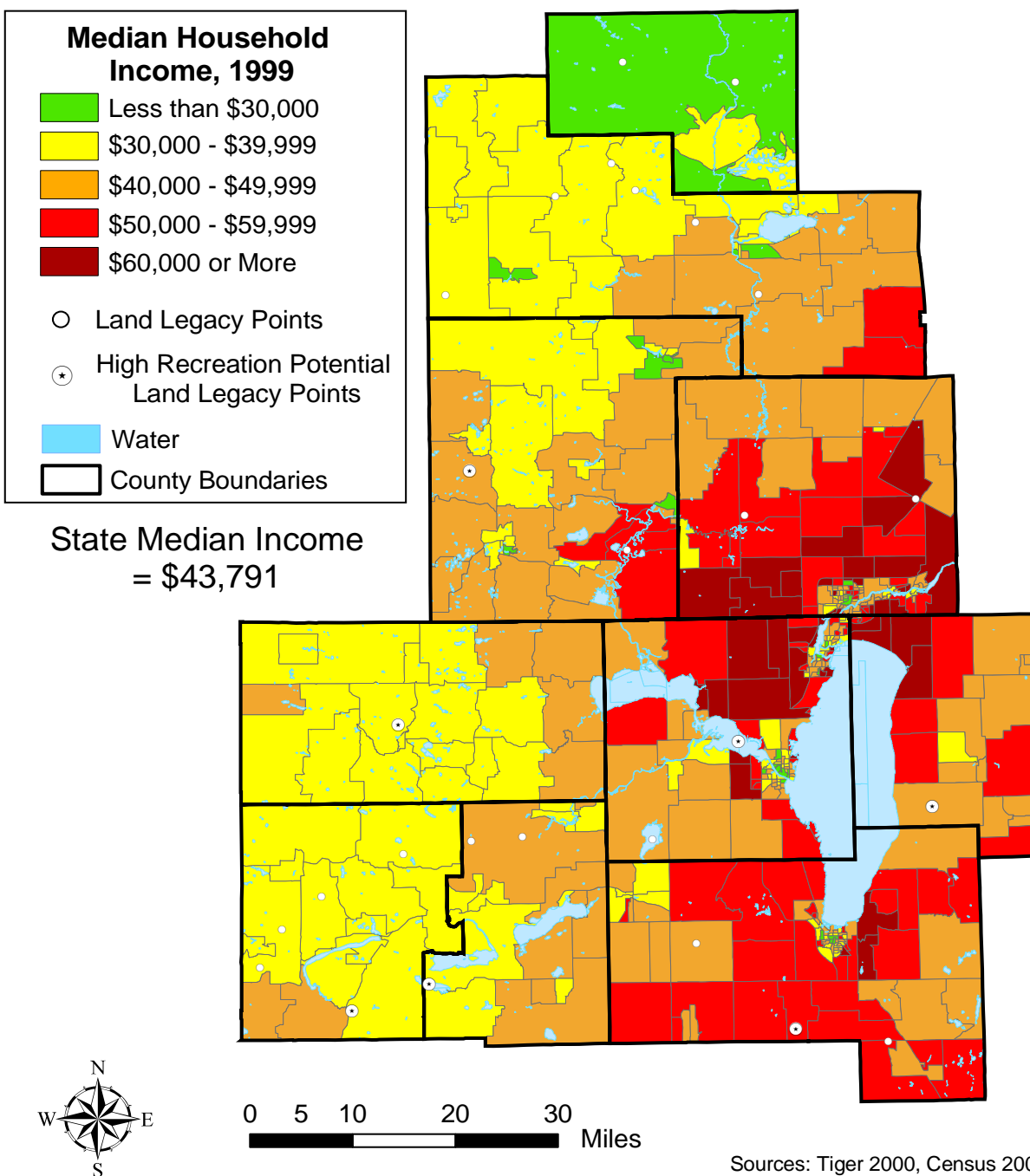
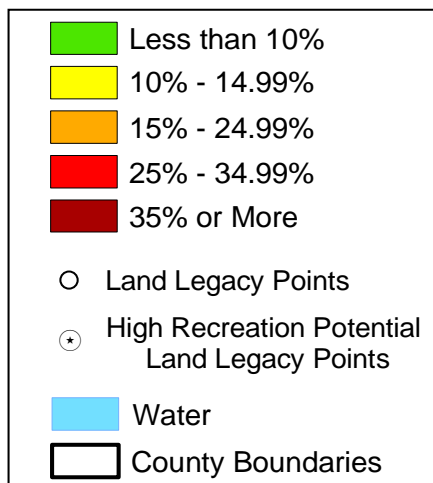




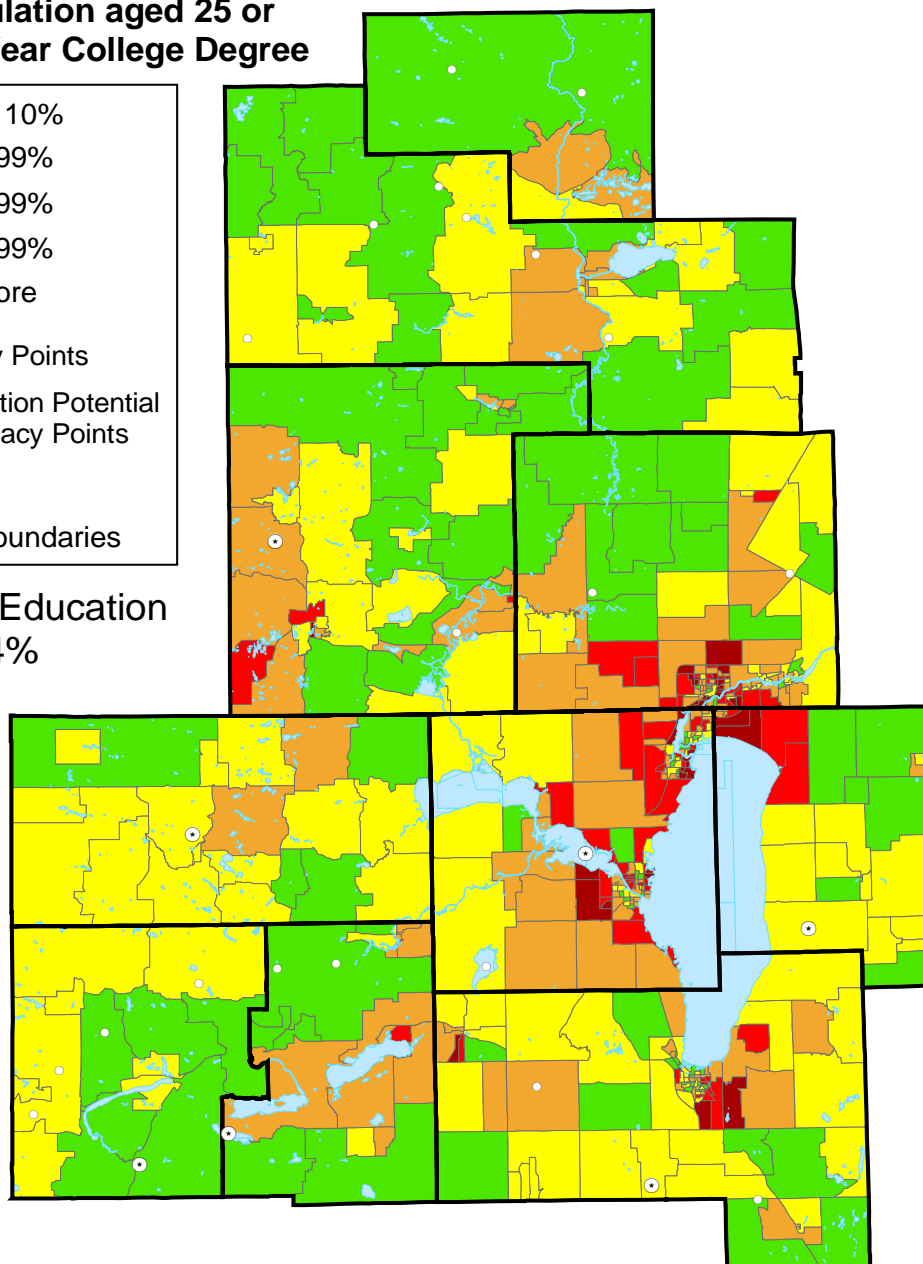
Figure 10

College Education Calculated at Block Group Level

Percent of Population aged 25 or Older with a 4-Year College Degree



State College Education
= 22.4%



0 5 10 20 30 Miles

Sources: TIGER 2000, Census 2000



Applied Population Lab and Wisconsin Department of Natural Resources

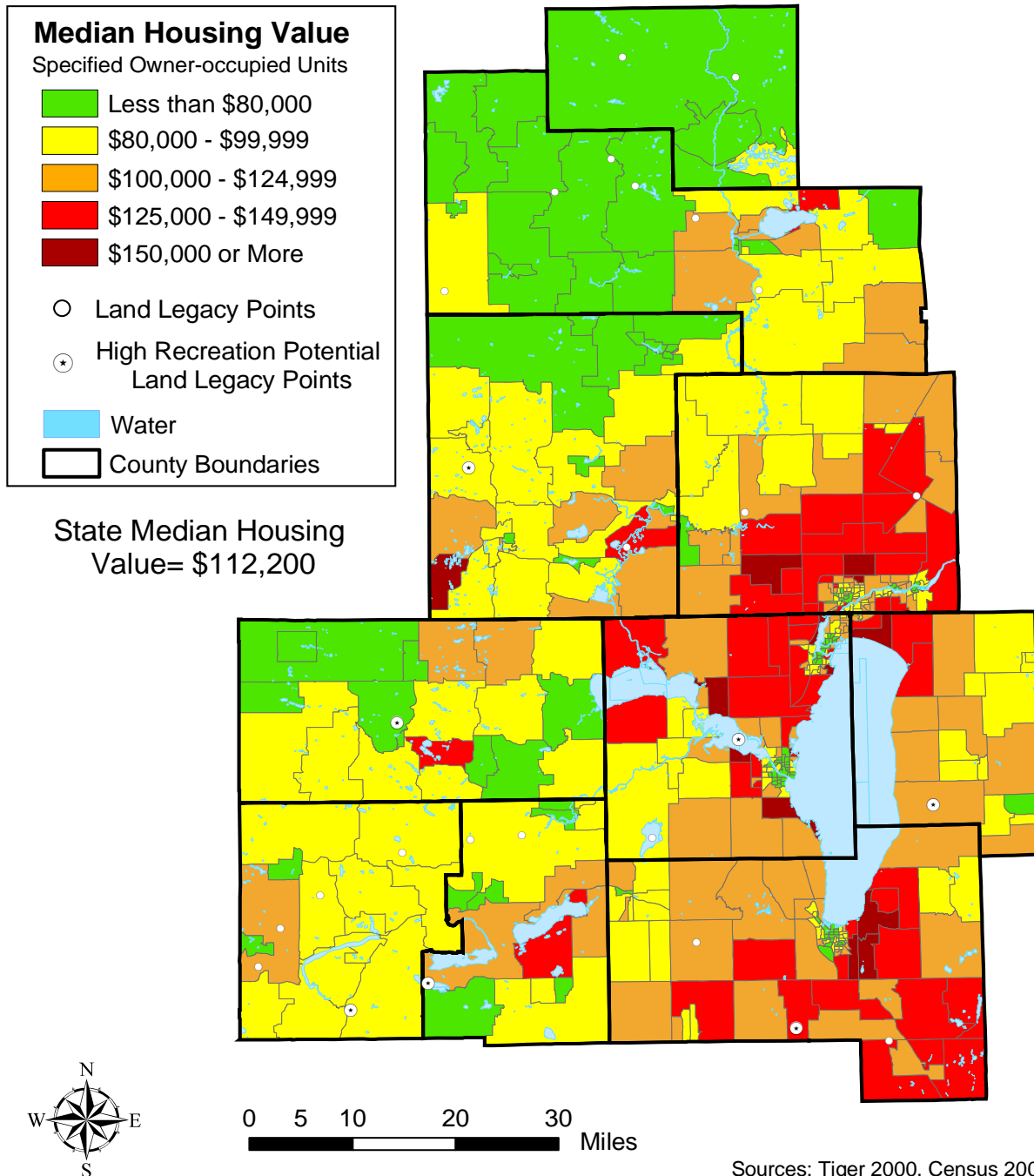
Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Figure 11

Median Housing Value Calculated at Block Group Level



Sources: Tiger 2000, Census 2000



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us



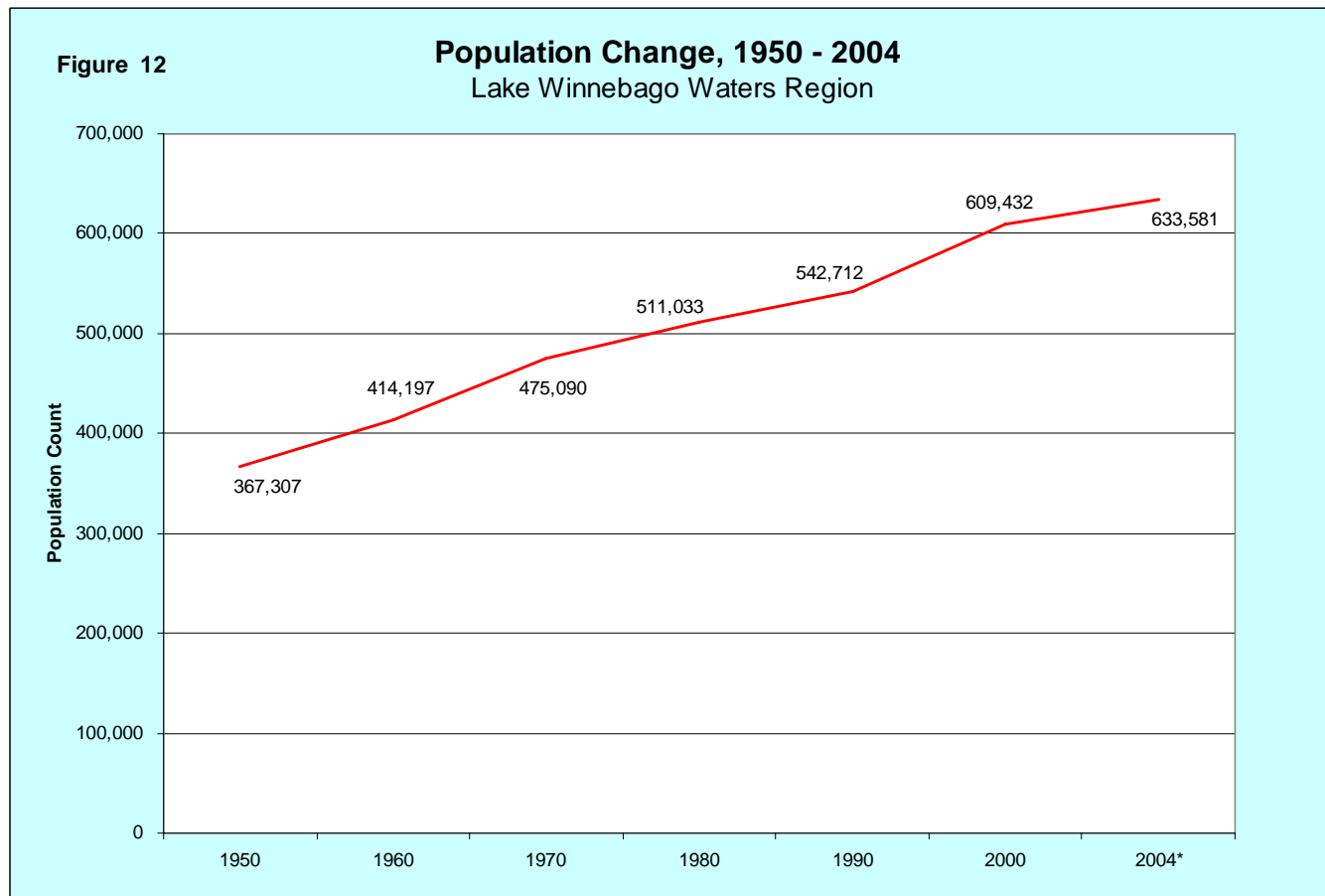


Looking at historical changes in population and housing may help to explain past and future trends in recreational participation. In this section, we examine demographic change in the Lake Winnebago Waters Region. We consider the growth, urbanization, and shifting age structure of the population. In addition, we detail: where housing development has occurred, shifts in the prevalence of seasonal housing, and the impact that natural amenities (like lakes and forests) have had on population and housing growth.

Note: Census data for Menominee County was not collected in 1950 and 1960. Regional totals for these years exclude Menominee County.

POPULATION CHANGE

The Lake Winnebago Waters Region has experienced steady population growth since at least 1950. Figure 12 shows Regional population counts from 1950-2004. Between 1950 and 2004, the Lake Winnebago Waters Region gained 266,274 residents for an increase of about 72%. The rate of increase was fastest between 1950 and 1970 when the Region grew by 30% (or 1.5% annually) in twenty years. Population growth occurred almost as quickly in the 1990s, at an average of 1.2% per year.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Population growth does not occur evenly across space, and while some parts of the Lake Winnebago Waters Region have continually experienced population growth, others areas have experienced stagnant population or periods of decline. Table 4 shows population change over time by county. Calumet, Outagamie, and Winnebago Counties have been growing at a fast pace since 1950. Since 1990, Waushara County has also experienced high growth. Green Lake and Fond du Lac Counties have experienced the slowest rate of population growth over the last several decades.

Table 4a
Population Counts over Time in the Lake Winnebago Waters Region

	Population Count						
	1950	1960	1970	1980	1990	2000	2004*
Calumet County	18,840	22,268	27,604	30,867	34,291	40,631	44,361
Fond du Lac County	67,829	75,085	84,567	88,964	90,083	97,296	99,608
Green Lake County	14,749	15,418	16,878	18,370	18,651	19,105	19,344
Marquette County	8,839	8,516	8,865	11,672	12,321	14,555	15,051
Menominee County	-	-	2,607	3,373	3,890	4,562	4,616
Outagamie County	81,722	101,794	119,398	128,730	140,510	160,971	168,840
Shawano County	35,249	34,351	32,650	35,928	37,157	40,664	41,944
Waupaca County	35,056	35,340	37,780	42,831	46,104	51,731	53,148
Waushara County	13,920	13,497	14,795	18,526	19,385	23,154	24,806
Winnebago County	91,103	107,928	129,946	131,772	140,320	156,763	161,863
Lake Winnebago Waters Region	367,307	414,197	475,090	511,033	542,712	609,432	633,581

* Estimate from Wisconsin Dept. of Administration

Sources: Census 1950-2000, Wisconsin Dept. of Administration, 2004

Table 4b
Population Change over Time in the Lake Winnebago Waters Region

	Population Change				Percent Change				Average Annual Percent Increase			
	1950-1970	1970-1990	1990-2000	2000-2004	1950-1970	1970-1990	1990-2000	2000-2004	1950-1970	1970-1990	1990-2000	2000-2004
Calumet County	8,764	6,687	6,340	3,730	46.5%	24.2%	18.5%	9.2%	2.3%	1.2%	1.8%	2.3%
Fond du Lac County	16,738	5,516	7,213	2,312	24.7%	6.5%	8.0%	2.4%	1.2%	0.3%	0.8%	0.6%
Green Lake County	2,129	1,773	454	239	14.4%	10.5%	2.4%	1.3%	0.7%	0.5%	0.2%	0.3%
Marquette County	26	3,456	2,234	496	0.3%	39.0%	18.1%	3.4%	0.0%	1.9%	1.8%	0.9%
Menominee County	N/A	1,283	672	54	N/A	49.2%	17.3%	1.2%	N/A	2.5%	1.7%	0.3%
Outagamie County	37,676	21,112	20,461	7,869	46.1%	17.7%	14.6%	4.9%	2.3%	0.9%	1.5%	1.2%
Shawano County	-2,599	4,507	3,507	1,280	-7.4%	13.8%	9.4%	3.1%	-0.4%	0.7%	0.9%	0.8%
Waupaca County	2,724	8,324	5,627	1,417	7.8%	22.0%	12.2%	2.7%	0.4%	1.1%	1.2%	0.7%
Waushara County	875	4,590	3,769	1,652	6.3%	31.0%	19.4%	7.1%	0.3%	1.6%	1.9%	1.8%
Winnebago County	38,843	10,374	16,443	5,100	42.6%	8.0%	11.7%	3.3%	2.1%	0.4%	1.2%	0.8%
Lake Winnebago Waters Region	107,783	67,622	66,720	24,149	29.3%	14.2%	12.3%	4.0%	1.5%	0.7%	1.2%	1.0%

Sources: Census 1950-2000, Wisconsin DOA 2004

Figure 13 shows the average annual percent increase in population that municipalities experienced over four time periods. Data are fitted to 2003 municipal boundaries.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us

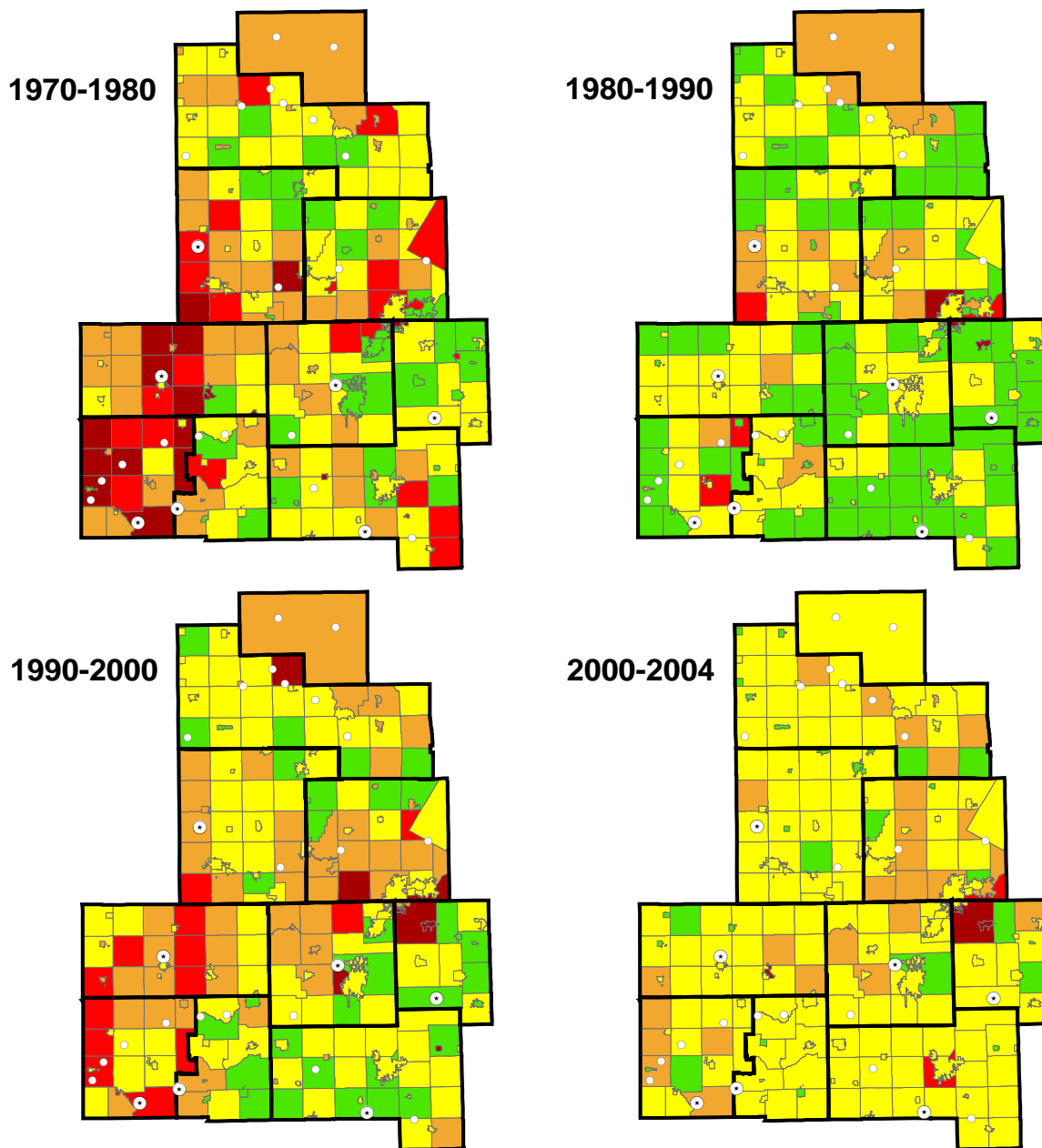




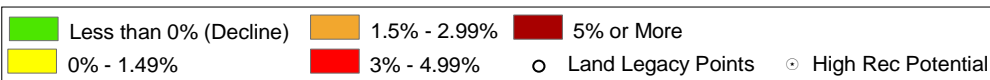
Figure 13

Population Change 1970-2004

Calculated at the Municipal Level



Average Annual Percent Change: Lake Winnebago Waters Region



Source:
Wisconsin DOA, 2004
Population Estimates
Tiger 2003



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





AGE STRUCTURE

Demographers refer to the proportion of different aged people in the population as the population's age structure. Table 5 shows how median age has changed from 1950-2000 in the Lake Winnebago Waters Region. In general, the population has gotten older over the last 50 years, with the median age increasing by about 5 years for the Region as a whole. The increase occurred between 1970 and 2000, as the Baby Boom generation began to reach older ages.

Table 5
Median Age in the Lake Winnebago Waters Region, 1950-2000

	Median Age					
	1950	1960	1970	1980	1990	2000
Calumet County	29.2	25.6	23.2	27.2	31.3	35.2
Fond Du Lac County	31.5	29.6	26.7	29.3	33.4	36.9
Green Lake County	34.1	34.9	33.3	33.9	36.8	40.9
Marquette County	35.6	37.2	37.5	36.1	39.1	40.9
Menominee County	N/A	N/A	17.0	21.1	24.5	27.7
Outagamie County	27.9	24.8	23.8	27.5	31.4	34.4
Shawano County	29.4	31.0	31.7	32.5	35.3	38.5
Waupaca County	33.5	35.0	34.1	32.6	35.0	38.5
Waushara County	34.5	35.8	34.8	34.9	38.6	42.1
Winnebago County	31.9	29.5	25.9	29.1	32.5	35.4
Lake Winnebago Waters Region	31.0	29.3	27.1	29.6	33.2	36.3

Source: Census 1950-2000

Note: Regional medians are derived from the weighted median of the county median ages.

The age structure of the population in the Lake Winnebago Waters Region is affected, in part, by migration patterns. Migration processes affect both population counts and the age structure of the population. The balance of in- and out-migration for a local area is known as "net migration." Net in-migration means that migration is contributing to (depending on natural increase in the specific area) population growth, while net out-migration would contribute to population decline. Migration especially impacts the age structure of a local population when people of different age groups experience opposite migration trends. For instance, young people tend to move out of more rural areas of the state and into cities and university centers; and older people tend to retire in natural amenity-rich rural areas. This means that many rural areas in Wisconsin are experiencing an aging population due, in part to migration; and many urban areas and university towns remain relatively young. Such age patterns will impact demand for different types of outdoor recreation.



Applied Population Lab and Wisconsin Department of Natural Resources

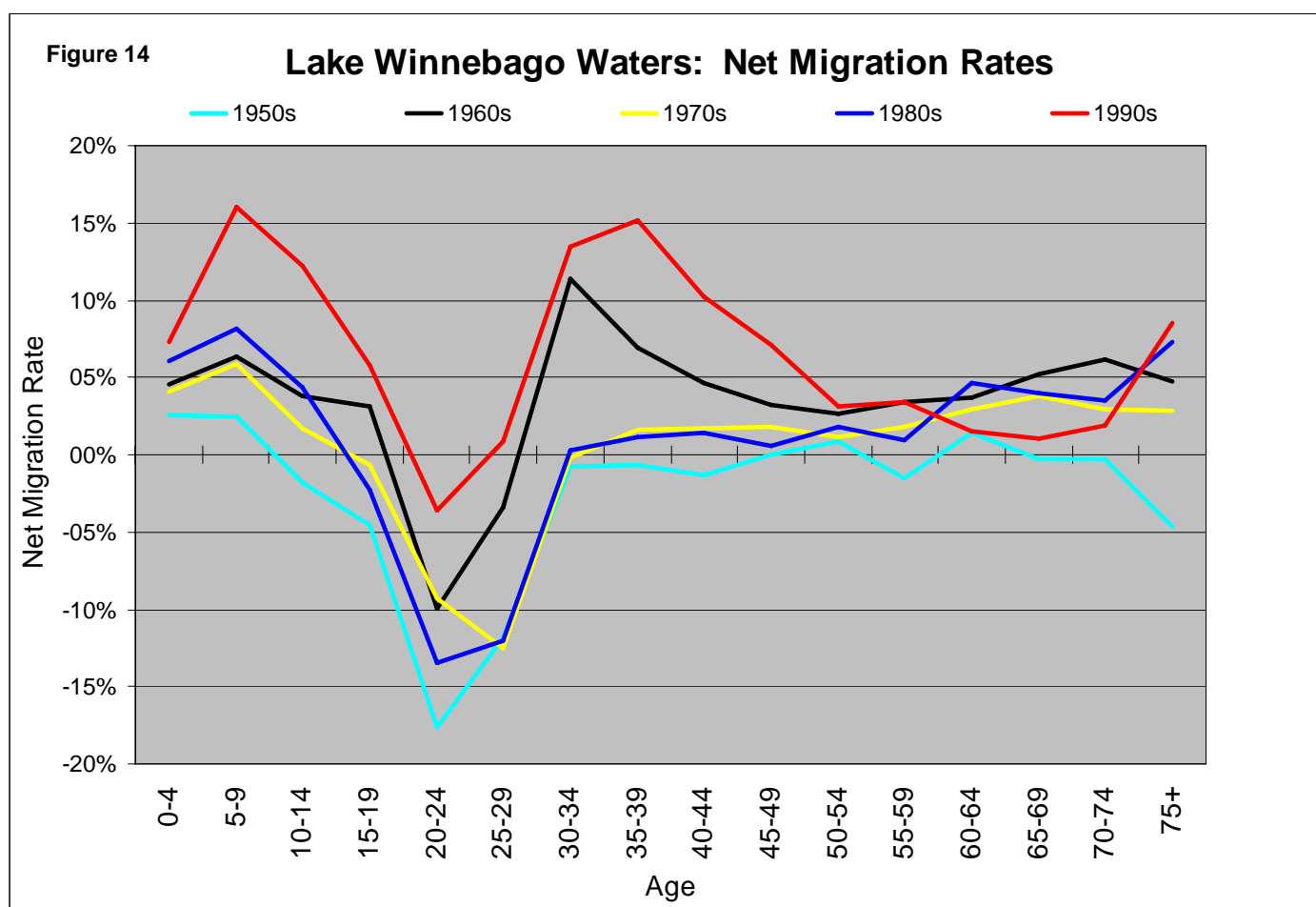
Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





NET MIGRATION BY AGE

Figure 14 summarizes age-specific net migration patterns for the Lake Winnebago Waters Region from 1950-2000. For example, in the 1950's the Lake Winnebago Waters Region experienced a net out-migration (below "0%" line) of most age groups. The 1950's net migration line tells us that the population aged 20-24 in 1960 was about 17% smaller than the population aged 10-14 in 1950. Between 1990 and 2000, the Lake Winnebago Waters Region experienced a net gain of residents at almost all age groups, especially of adults aged 30-50 and children. Such migration patterns will influence the number of young adults and older people in the local population.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





URBANIZATION

Over time the population of the U.S. and of Wisconsin has become increasingly urban. In 1900, about 38% of Wisconsin residents lived in urban areas. By 2000, this proportion had increased to 68%.

The urban population has increased more quickly than the rural population in the U.S. due to both natural increase and migration. In the past, rural residents tended to have more children than urban residents, but over the last several decades, this trend has switched and urban areas have higher birth rates than rural ones. In 2003, Wisconsin metropolitan counties had 13.3 births for every 1,000 residents, while non-metropolitan counties had only 11.3 (calculated from Wisconsin Dept. of Health and Family Services data). In addition, people have tended to move out of rural areas and off farms and into urban areas over the past several decades.

Table 6 shows the percent of the population living in urban areas 1950-2000. The urban population in the Lake Winnebago Waters Region has increased from 48% in 1950 to 61% in 2000. Much of this urbanization has occurred in Calumet, Outagamie, and Winnebago Counties.

Table 6
Urbanization in the Lake Winnebago Waters Region, 1950-2000

	Percent Living in Urban Areas					
	1950	1960	1970	1980	1990	2000
Calumet County	0.0%	20.2%	44.7%	49.2%	57.3%	60.3%
Fond Du Lac County	55.4%	58.0%	57.1%	55.7%	57.7%	62.1%
Green Lake County	31.6%	31.1%	31.4%	29.3%	28.4%	25.1%
Marquette County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Menominee County	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Outagamie County	62.2%	67.3%	68.6%	71.0%	72.8%	74.1%
Shawano County	16.7%	17.8%	19.9%	19.5%	20.4%	23.2%
Waupaca County	35.1%	36.3%	35.4%	32.6%	31.7%	37.0%
Waushara County	0.2%	0.3%	0.3%	0.5%	0.3%	0.3%
Winnebago County	72.3%	72.1%	77.8%	79.5%	81.7%	84.2%
Lake Winnebago Waters Region	48.2%	52.7%	56.6%	56.2%	58.3%	60.5%

Source: Census 1950-2000

Note: Some of the differences shown here, may be the result of changes in the way "urban" is defined by the U.S. Census Bureau.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





MINORITY GROUPS

Wisconsin, in general, has a predominately White/Non-Hispanic population (87% in 2000). Though the number of minority residents has been increasing over the last few decades, minority groups still constitute a small proportion of the population for most Regions.

In the Lake Winnebago Waters Region, 94% of the population identified as non-Hispanic and White on the 2000 Census. Hispanics and American Indians each made up about 2% of the total population. Asians made up about 1.5%. The Hispanic and Asian populations are mostly concentrated in the more urban places in the Region (see Figure 6). The American Indian population is highly concentrated in Menominee County and in the northeast part of Shawano County.

Table 7 shows the Hispanic, American Indian, and Asian populations 1950-2000. The number of Hispanic persons in the Region increased from 4,527 residents in 1990 to 11,178 residents in 2000, an increase of 147%. Much of this increase occurred in Outagamie and Shawano Counties. American Indians have had a strong presence in the Region for several years, due to the reservation in Menominee County. Still, this group's population has been increasing over the last several decades, particularly in Shawano, Waupaca, and Outagamie Counties. While Asians make up a smaller proportion of the total population, their numbers have been increasing rapidly in the Lake Winnebago Waters Region in recent years. Between 1990 and 2000, almost 4,000 Asian residents were added to the Region's population, an increase of 86%.

Table 7
Changing Race and Ethnicity, 1950-2000

	Number of Hispanic Persons						Percent Change
	1950	1960	1970	1980	1990	2000	1990-2000
Calumet County	N/A	N/A	546	105	149	435	191.9%
Fond Du Lac County	N/A	N/A	1,183	752	937	1,987	112.1%
Green Lake County	N/A	N/A	135	194	192	393	104.7%
Marquette County	N/A	N/A	24	98	149	N/A	N/A
Menominee County	N/A	N/A	0	57	55	122	121.8%
Outagamie County	N/A	N/A	1,832	680	987	3,207	224.9%
Shawano County	N/A	N/A	596	86	129	407	215.5%
Waupaca County	N/A	N/A	207	246	406	714	75.9%
Waushara County	N/A	N/A	161	296	379	848	123.7%
Winnebago County	N/A	N/A	1,440	719	1,144	3,065	167.9%
Lake Winnebago Waters Region	N/A	N/A	6,124	3,233	4,527	11,178	146.9%



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Table 7 Continued

	Number of American Indian Persons						Percent Change
	1950	1960	1970	1980	1990	2000	1990-2000
Calumet County	N/A	43	60	104	146	139	-4.8%
Fond Du Lac County	N/A	48	131	184	297	371	24.9%
Green Lake County	N/A	2	4	22	42	38	-9.5%
Marquette County	N/A	6	8	25	49	N/A	N/A
Menominee County	N/A	-	2,306	3,014	3,469	3,981	14.8%
Outagamie County	N/A	942	1,064	1,618	1,965	2,471	25.8%
Shawano County	N/A	41	981	1,366	1,762	2,545	44.4%
Waupaca County	N/A	27	95	107	125	217	73.6%
Waushara County	N/A	7	12	37	70	72	2.9%
Winnebago County	N/A	170	310	494	685	726	6.0%
Lake Winnebago Waters Region	N/A	1,286	4,971	6,971	8,610	10,560	22.6%

	Number of Asian Persons						Percent Change
	1950	1960	1970	1980	1990	2000	1990-2000
Calumet County	N/A	2	N/A	N/A	173	632	265.3%
Fond Du Lac County	N/A	27	N/A	N/A	448	873	94.9%
Green Lake County	N/A	0	N/A	N/A	103	66	-35.9%
Marquette County	N/A	0	N/A	N/A	18	N/A	N/A
Menominee County	N/A	-	N/A	N/A	0	1	N/A
Outagamie County	N/A	35	N/A	N/A	1,904	3,651	91.8%
Shawano County	N/A	16	N/A	N/A	70	154	120.0%
Waupaca County	N/A	3	N/A	N/A	92	146	58.7%
Waushara County	N/A	1	N/A	N/A	43	87	102.3%
Winnebago County	N/A	23	N/A	N/A	1,728	2,924	69.2%
Lake Winnebago Waters Region	N/A	107	N/A	N/A	4,579	8,534	86.4%

Source: Census 1950-2000

Note: Methods of data collection and reporting on race and ethnicity in the Census have changed over the years. Consequently, data for some years are not available or have been estimated, and some of the changes seen above may be artificial. Definitions were relatively stable between 1990 and 2000.

Note: Use of terminology and “labels” when talking about racial ethnic populations can be a sensitive issue. The authors of this report understand that there are some political, cultural and social preferences and implications in using particular terminology. We have chosen to use language that reflects Census-designated racial and ethnic categories in this report.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
 Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us

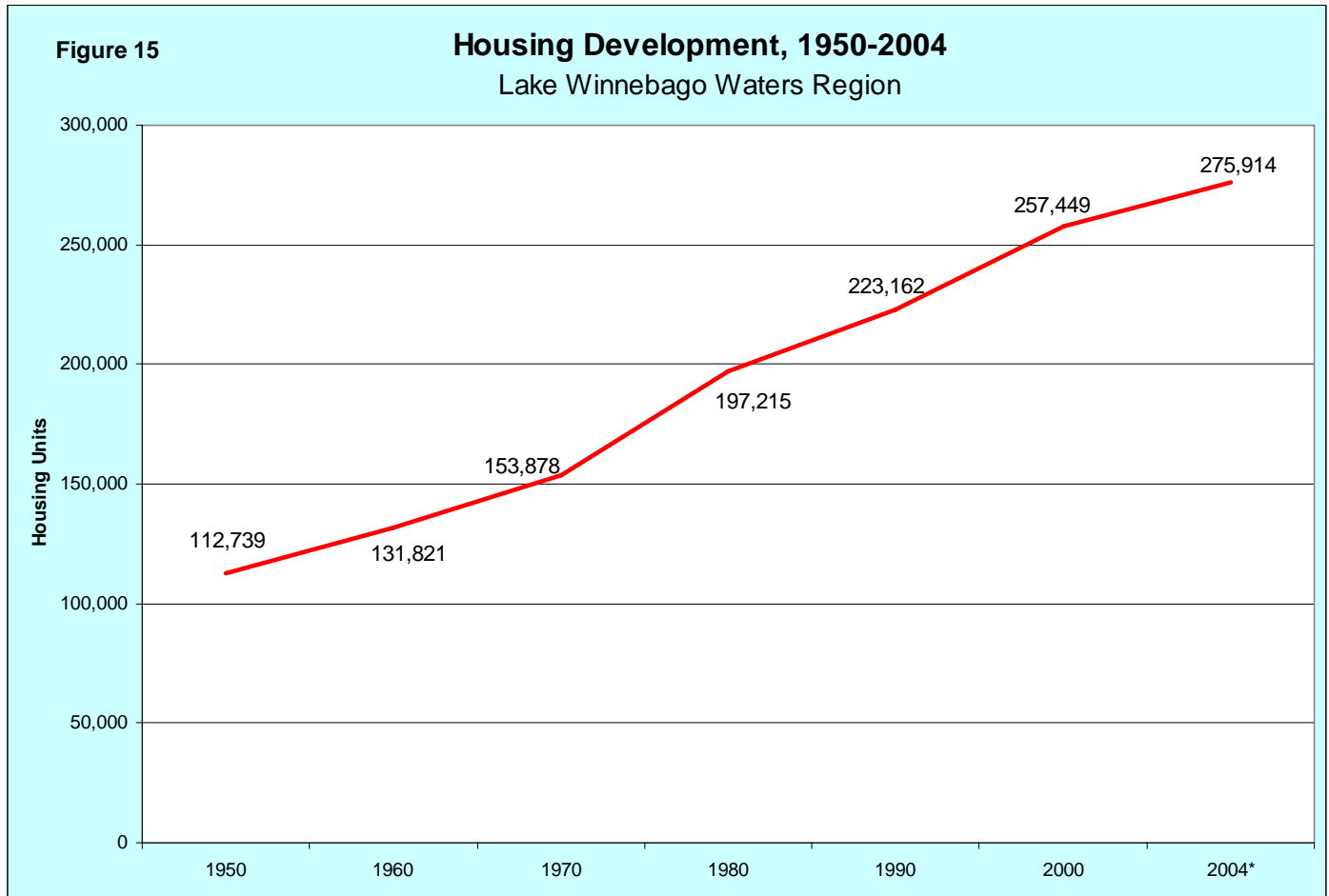




HOUSING DEVELOPMENT

Just as population in the Lake Winnebago Waters Region has increased over time, so too has housing development. Figure 15 and Table 8 show the trajectory of housing growth for the Region and by county between 1950 and 2004. The number of housing units increased from 112,739 units in 1950 to 275,914 in 2004, for an overall increase of 145%. The fastest rate of growth occurred in the 1970's, when housing units increased by 28% over the decade. Between 2000 and 2004, the Lake Winnebago Waters Region added 18,465 new housing units, increasing by 7%.

Calumet, Outagamie, and Winnebago Counties have consistently added the most new housing units in the Region and have experienced the fastest rates of housing development. Calumet County in particular has experienced high housing growth over the last few years, increasing by almost 4% each year between 2000 and 2004.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





Table 8a
Housing Development over Time in the Lake Winnebago Waters Region

	Number of Housing Units						
	1950	1960	1970	1980	1990	2000	2004*
Calumet County	5,626	6,603	7,884	10,428	12,465	15,758	18,154
Fond du Lac County	20,010	22,921	25,881	31,739	34,548	39,271	41,204
Green Lake County	5,288	6,125	6,859	8,319	9,202	9,831	10,163
Marquette County	3,554	4,083	4,675	7,128	8,035	8,664	9,161
Menominee County	-	-	704	1,327	1,742	2,098	2,174
Outagamie County	22,510	28,116	33,643	43,893	51,923	62,614	68,211
Shawano County	10,816	11,430	12,088	15,246	16,737	18,317	19,457
Waupaca County	11,419	12,294	13,974	18,142	20,141	22,508	23,716
Waushara County	5,716	6,973	8,037	11,242	12,246	13,667	14,506
Winnebago County	27,800	33,276	40,133	49,751	56,123	64,721	69,168
Lake Winnebago Waters Region	112,739	131,821	153,878	197,215	223,162	257,449	275,914

* Estimate from Wisconsin Dept. of Administration

Sources: Census 1950-2000, Wisconsin Dept. of Administration, 2004

Table 8b
Housing Development over Time in the Lake Winnebago Waters Region

	Housing Unit Change				Percent Change				Average Annual Percent Increase			
	1950-1970	1970-1990	1990-2000	2000-2004	1950-1970	1970-1990	1990-2000	2000-2004	1950-1970	1970-1990	1990-2000	2000-2004
Calumet County	2,258	4,581	3,293	2,396	40.1%	58.1%	26.4%	15.2%	2.0%	2.9%	2.6%	3.8%
Fond du Lac County	5,871	8,667	4,723	1,933	29.3%	33.5%	13.7%	4.9%	1.5%	1.7%	1.4%	1.2%
Green Lake County	1,571	2,343	629	332	29.7%	34.2%	6.8%	3.4%	1.5%	1.7%	0.7%	0.8%
Marquette County	1,121	3,360	629	497	31.5%	71.9%	7.8%	5.7%	1.6%	3.6%	0.8%	1.4%
Menominee County	N/A	1,038	356	76	N/A	147.4%	20.4%	3.6%	N/A	7.4%	2.0%	0.9%
Outagamie County	11,133	18,280	10,691	5,597	49.5%	54.3%	20.6%	8.9%	2.5%	2.7%	2.1%	2.2%
Shawano County	1,272	4,649	1,580	1,140	11.8%	38.5%	9.4%	6.2%	0.6%	1.9%	0.9%	1.6%
Waupaca County	2,555	6,167	2,367	1,208	22.4%	44.1%	11.8%	5.4%	1.1%	2.2%	1.2%	1.3%
Waushara County	2,321	4,209	1,421	839	40.6%	52.4%	11.6%	6.1%	2.0%	2.6%	1.2%	1.5%
Winnebago County	12,333	15,990	8,598	4,447	44.4%	39.8%	15.3%	6.9%	2.2%	2.0%	1.5%	1.7%
Lake Winnebago Waters Region	41,139	69,284	34,287	18,465	36.5%	45.0%	15.4%	7.2%	1.8%	2.3%	1.5%	1.8%

Figure 16 shows housing density between 1950 and 2000 at the Census Block Group level. The maps show the approximate number of housing units per square mile in each decade. The landscape has gradually filled up with increasing numbers of homes, especially in the southeastern part of the Region.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us

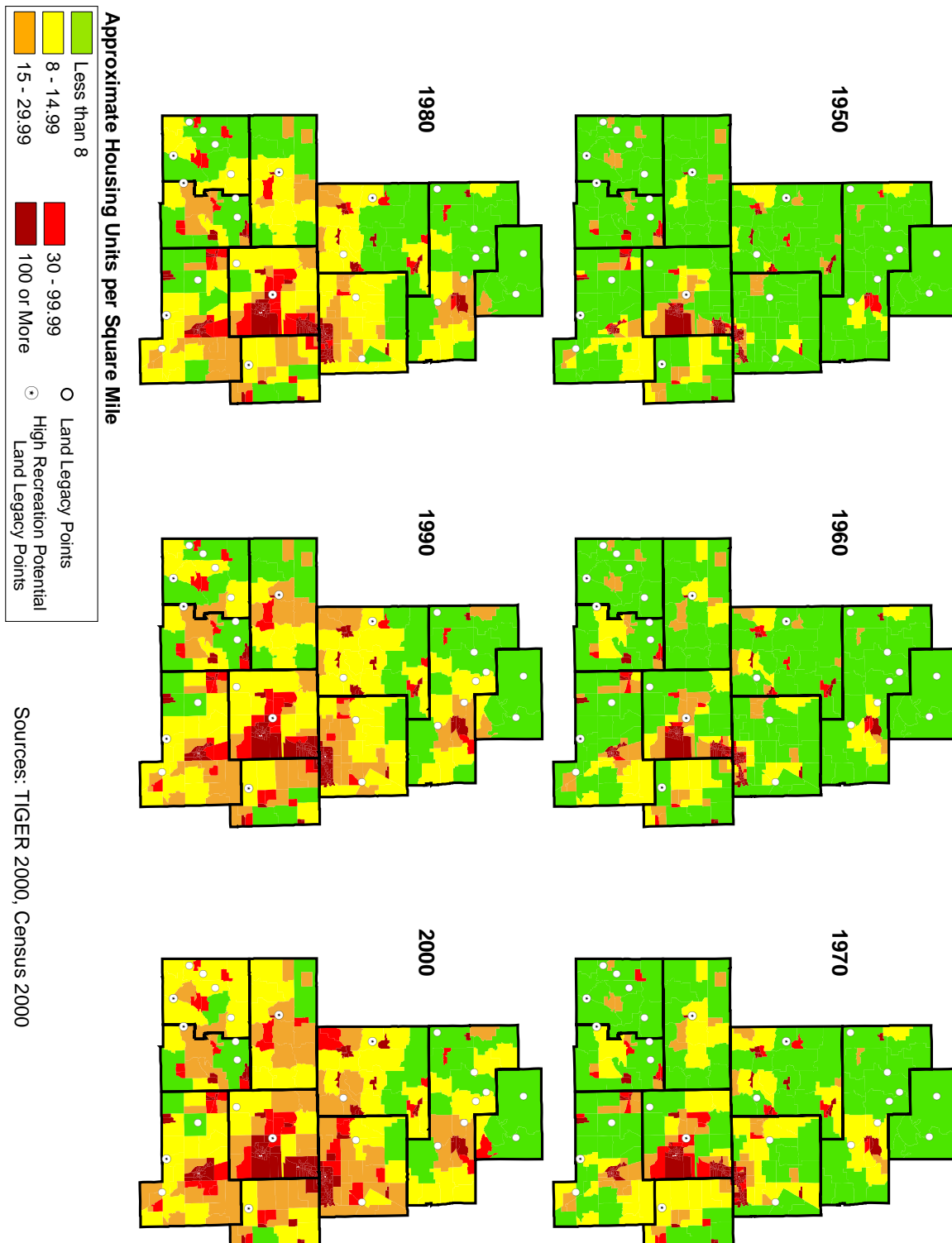




Figure 16

Housing Density Change over Time

Calculated by Block Group



Sources: TIGER 2000, Census 2000



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us

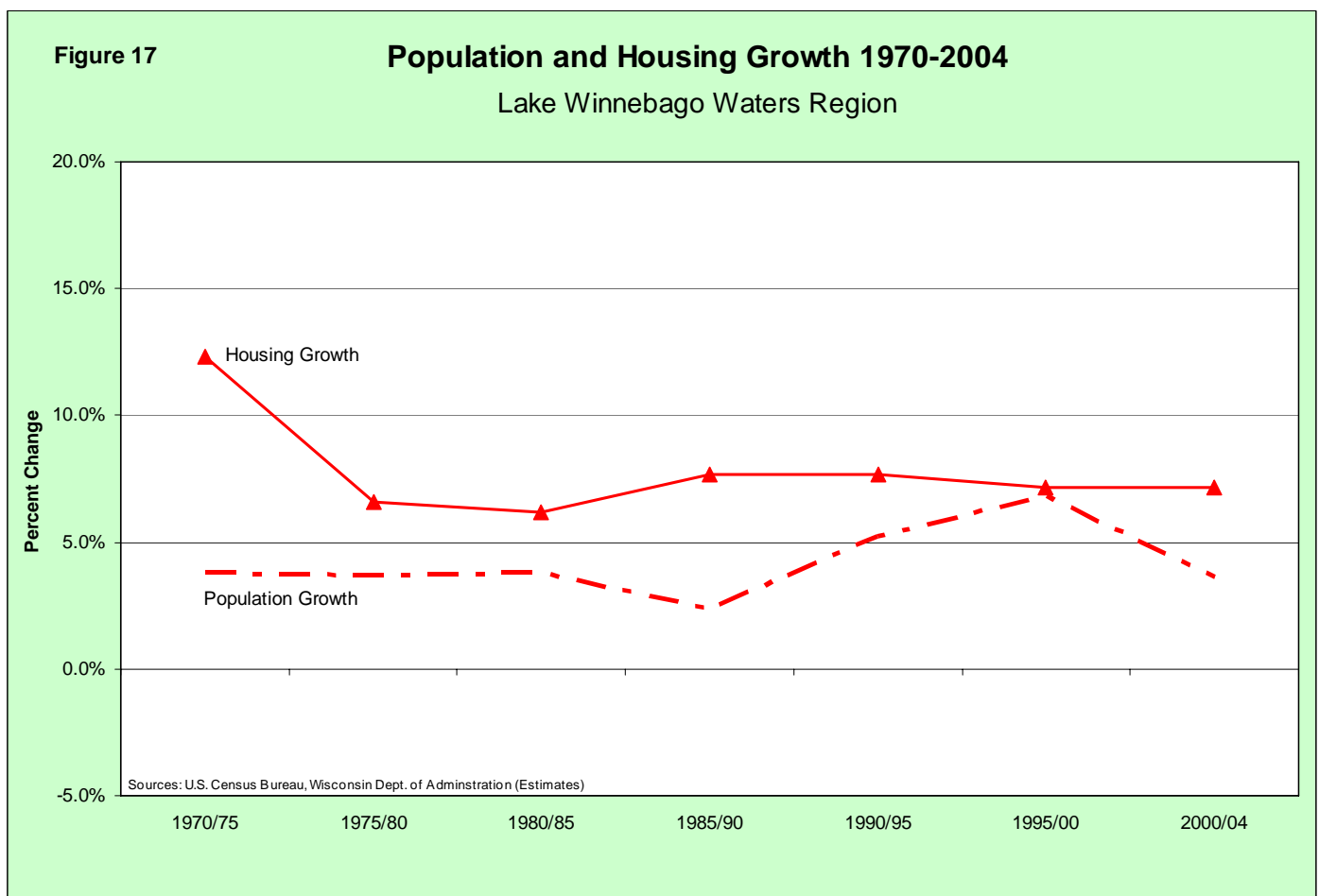




Assuming that more people need more houses, we would expect housing growth to occur in relation to population growth. In reality, housing development depends on factors other than population growth such as: seasonal housing, interest rates, decisions of policy makers and residential developers, and the number of people per household. For this reason, we sometimes see housing growth that outpaces population growth, and vice versa.

Figure 17 shows how housing development has occurred with relation to population growth over the last few decades in the Lake Winnebago Waters Region. The chart shows the percent change in each time period, with 0% meaning that the number of housing units and/or population in the Region did not change at all, negative percentages depicting a decline, and positive percentages showing percent of increase.

In the 1970's housing growth occurred at a rapid rate. In 1975 the number of housing units in the Region was about 12% higher than the number of housing units in 1970, while the number of people in 1975 was about 4% higher than the number of people in 1970. Housing development has consistently outpaced population growth in the Lake Winnebago Waters Region.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





SEASONAL HOUSING

Seasonal housing makes up a relatively small proportion of housing units in the Lake Winnebago Waters Region. However, in Menominee, Waushara, Marquette, and Green Lake Counties, it is an important factor to consider for outdoor recreation planning. Table 9 shows the number and percent of all housing units that were for seasonal use 1950-2000.

The number of seasonal homes in the Region increased between 1950 and 1990, from 6,572 homes to 15,450 (an increase of 135%). Much of this increase occurred in Waushara and Marquette Counties. Then, between 1990 and 2000, the number of seasonal homes dropped, due to conversion into full-time residencies. During the 1990's, many people across Wisconsin chose to retire and live full-time in homes that were previously only for seasonal use.

Table 9
Seasonal Housing in the Lake Winnebago Waters Region, 1950-2000

	Number of Seasonal Housing Units						Percent Seasonal		
	1950	1960	1970	1980	1990	2000	1960	1980	2000
Calumet County	363	462	214	406	311	287	7.0%	3.9%	1.8%
Fond Du Lac County	842	967	633	921	859	573	4.2%	2.9%	1.5%
Green Lake County	605	853	1,211	1,208	1,537	1,422	13.9%	14.5%	14.5%
Marquette County	649	1,187	806	2,419	2,773	2,268	29.1%	33.9%	26.2%
Menominee County	N/A	N/A	45	482	528	686	N/A	36.3%	32.7%
Outagamie County	51	175	282	123	178	237	0.6%	0.3%	0.4%
Shawano County	1,033	1,258	1,017	2,202	1,972	1,793	11.0%	14.4%	9.8%
Waupaca County	946	1,160	1,392	2,248	2,261	1,681	9.4%	12.4%	7.5%
Waushara County	991	2,315	1,888	3,913	3,886	3,693	33.2%	34.8%	27.0%
Winnebago County	1,091	1,053	700	1,299	1,145	1,032	3.2%	2.6%	1.6%
Lake Winnebago Waters Region	6,572	9,430	8,187	15,221	15,450	13,672	7%	7.7%	5.3%

Source: Census 1950-2000

Note: Data collection and reporting on seasonal housing have changed over the years. Consequently, data for some years have been estimated.

Note: Because of changing Census definitions and compilation methods over time, the data shown here are not perfectly comparable between decades, and they do not represent exact true counts. Rather, these data are estimates of the actual proportions of seasonal housing units, and they offer a general understanding of how seasonal housing has fluctuated over the time period.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





NATURAL AMENITIES, RECREATION AND POPULATION CHANGE

Researchers (i.e. David McGranahan, Calvin Beale, and Ken Johnson) have found evidence that natural amenities (like climate, topography, forests, lakes, and rivers) and recreational resources are associated with population growth in some rural areas. The idea is that many people are attracted to natural amenities and want to live in or near places that offer natural beauty and recreational opportunities. According to this line of thought, we might expect areas rich in natural amenities to experience disproportionately high population and housing growth. This is important to consider because population and housing growth in these amenity-rich areas will impact the supply and demand for outdoor recreation, as well as the integrity of the natural environment.

We can get an idea of what the capacity for such amenity-based growth might be the Lake Winnebago Waters Region by looking at land cover. Table 10 shows land cover types in the Lake Winnebago Waters Region, as they existed in 1992. The Region has more inland water and is more agricultural than most of Wisconsin. Winnebago and Calumet Counties, in particular have a large proportion of land covered in water (lakes and rivers) due to the presence of Lake Winnebago. Outagamie, Calumet, and Fond du Lac Counties are especially agricultural. In comparison with other Regions, the Lake Winnebago Waters Region has less forested land; however, Menominee County is almost entirely forested.

Table 10
Land Cover in the Lake Winnebago Waters Region

	Urban	Agricultural	Grassland	Forest	Water	Wetland	Barren	Shrubland
Calumet County	1.3%	63.9%	1.4%	3.2%	19.3%	9.4%	1.4%	0.0%
Fond du Lac County	2.0%	62.2%	10.5%	4.6%	5.5%	13.5%	1.7%	0.1%
Green Lake County	1.2%	45.5%	11.8%	11.9%	7.2%	21.5%	0.7%	0.1%
Marquette County	0.5%	27.6%	17.1%	30.0%	2.6%	21.9%	0.2%	0.2%
Menominee County	0.1%	1.0%	2.0%	80.7%	1.8%	14.1%	0.0%	0.2%
Outagamie County	4.2%	69.1%	2.9%	4.5%	0.6%	17.9%	0.9%	0.0%
Shawano County	0.5%	40.6%	9.7%	25.2%	1.8%	21.7%	0.4%	0.1%
Waupaca County	1.3%	39.5%	11.6%	22.6%	1.8%	22.0%	1.1%	0.0%
Waushara County	0.3%	34.6%	20.2%	27.4%	2.0%	13.9%	1.5%	0.0%
Winnebago County	5.4%	50.9%	3.8%	3.4%	24.1%	11.0%	1.3%	0.0%
Lake Winnebago Waters Region	1.7%	45.1%	9.5%	19.5%	6.0%	17.1%	1.0%	0.1%
Wisconsin State	1.6%	30.8%	10.7%	37.5%	3.4%	14.1%	1.1%	0.9%

Source: Wisconsin DNR Wisland, 1998



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





In their research, Beale and Johnson have identified non-metropolitan counties that have a great deal of tourism, recreation and entertainment, and seasonal housing. They call these counties “Nonmetro Recreation Counties,” and they find that across the U.S., Recreation Counties have experienced especially high net migration rates, and higher population growth rates than either metropolitan counties or other non-metropolitan counties (Johnson and Beale, 2002).

In the Lake Winnebago Waters Region, Green Lake, Marquette, Menominee, and Waushara Counties are classified as Nonmetro Recreation Counties. These counties have the most forested land in the Region (Menominee with 80%, Marquette with 30%, and Waushara with 27%), and Green Lake County has the most water that is not associated with Lake Winnebago (7%). Table 11 compares population and housing change over time in Recreation Counties to other counties in the Lake Winnebago Waters Region. Marquette, Menominee, and Waushara Counties (along with Calumet and Outagamie Counties) have consistently grown at a faster rate than other counties in the Lake Winnebago Waters Region. Green Lake County, on the other hand, has experienced relatively slow population and housing growth.

Table 11
Natural Amenities, Recreation, and Population Change: Lake Winnebago Waters Region

	Land Cover		Population Change			Housing Change		
	% Forest	% Water	1970-1990	1990-2000	2000-2004	1970-1990	1990-2000	2000-2004
Recreation Counties								
Green Lake County	11.9%	7.2%	10.5%	2.4%	1.3%	34.2%	6.8%	3.4%
Marquette County	30.0%	2.6%	39.0%	18.1%	3.4%	71.9%	7.8%	5.7%
Menominee County	80.7%	1.8%	49.2%	17.3%	1.2%	147.4%	20.4%	3.6%
Waushara County	27.4%	2.0%	31.0%	19.4%	7.1%	52.4%	11.6%	6.1%
Other Counties								
Calumet County	3.2%	19.3%	24.2%	18.5%	9.2%	58.1%	26.4%	15.2%
Fond du Lac County	4.6%	5.5%	6.5%	8.0%	2.4%	33.5%	13.7%	4.9%
Outagamie County	4.5%	0.6%	17.7%	14.6%	4.9%	54.3%	20.6%	8.9%
Shawano County	25.2%	1.8%	13.8%	9.4%	3.1%	38.5%	9.4%	6.2%
Waupaca County	22.6%	1.8%	22.0%	12.2%	2.7%	44.1%	11.8%	5.4%
Winnebago County	3.4%	24.1%	8.0%	11.7%	3.3%	39.8%	15.3%	6.9%

Sources: Census 1950-2000; Wisconsin Dept. of Administration, 2004; Wisconsin DNR WiscLand, 1998

It is important to note that several other factors (in addition to natural amenities and recreational opportunity) impact population and housing growth. For instance, distance from major cities and transportation routes also plays a large role in determining population and housing growth rates. These factors likely account for the observed high growth in Outagamie, Calumet, and Winnebago Counties and may account, in part, for the slow growth of the more isolated Green Lake County.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





The Wisconsin DOA provides population projections at the municipality and county levels. At the county level, they provide these projections by age, allowing us to estimate county median ages for coming years. According to these projections, the population of the Lake Winnebago Waters Region will continue to increase in size and in median age over the next few years.

POPULATION PROJECTIONS

By 2010 the Region's population is projected to grow to 661,427 residents, an increase of more than 4% over the 2004 population (see Table 12). By 2020 the population of the Lake Winnebago Waters Region is projected to reach 708,232. Calumet, Menominee, and Outagamie Counties are projected to have the highest rates of increase in the Region. Outagamie County is projected to add the largest number of new residents, followed by Winnebago, Calumet, and Fond du Lac Counties.

Table 12
Population Projections for the Lake Winnebago Waters Region

	Estimate	Projection		Projected Increase		Average Annual % Increase	
	2004	2010	2020	2004-2010	2010-2020	2004-2010	2010-2020
Calumet County	44,361	47,398	53,473	3,037	6,075	1.14%	1.28%
Fond Du Lac County	99,608	103,031	108,494	3,423	5,463	0.57%	0.53%
Green Lake County	19,344	19,666	20,064	322	398	0.28%	0.20%
Marquette County	15,051	15,579	16,293	528	714	0.58%	0.46%
Menominee County	4,616	4,978	5,382	362	404	1.31%	0.81%
Outagamie County	168,840	180,260	198,948	11,420	18,688	1.13%	1.04%
Shawano County	41,944	42,987	45,058	1,043	2,071	0.41%	0.48%
Waupaca County	53,148	54,263	56,180	1,115	1,917	0.35%	0.35%
Waushara County	24,806	26,548	27,726	1,742	1,178	1.17%	0.44%
Winnebago County	161,863	166,717	176,614	4,854	9,897	0.50%	0.59%
Lake Winnebago Waters Region	633,581	661,427	708,232	27,846	46,805	0.73%	0.71%

Source: Wisconsin Dept. of Administration, 2004

Figure 18 shows the percent increase in population projected to occur at the municipality level 2000-2010 and 2010-2020. In general, most municipalities in the Region are expected to grow, but a few municipalities are projected to lose population. Growth is projected to occur most in the Fox River Valley area. In particular, the Towns of Greenville, Buchanan, and Ellington in Outagamie County are projected to grow quickly. In addition, most of Outagamie County is projected to experience high population growth rates, along with the Towns of Algoma and Winneconne in Winnebago County and the City of Menasha, the Village of Sherwood, and the Town of Harrison in Calumet County.

Other municipalities across the Region that are projected to experience high growth rates include: the Towns of Bartelme, Red Springs, and Waukechon in Shawano County; the Towns of Iola, Scandinavia, and Dayton in Waupaca County; the City of Wautoma in Waushara County; the Towns of Oxford and Buffalo in Marquette County; the Town of Marquette in Green Lake County; and the Villages of Mount Calvary and Eden and the Town of Taycheedah in Fond du Lac County.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





High recreational potential Land Legacy points are located in and around some areas expected to experience high growth in coming years. These include: the Sand County Trout Streams in the Towns of Scandinavia and just outside the City of Wautoma, the Lakes of the Winnebago Pool in the Town of Algoma, the Portage to Buffalo Lake Corridor in the Town of Buffalo, and the Grand River Marsh and Lake Puckaway area between the Town of Buffalo and the Town of Marquette. Additional Land Legacy points located in potential high growth areas include: the Red River between the Towns of Bartelme and Red Springs, the Lower Wolf River Bottomlands in the Towns of Waukechon and Ellington, and the Oxford Savanna and the Neenah Creek in the Town of Oxford.



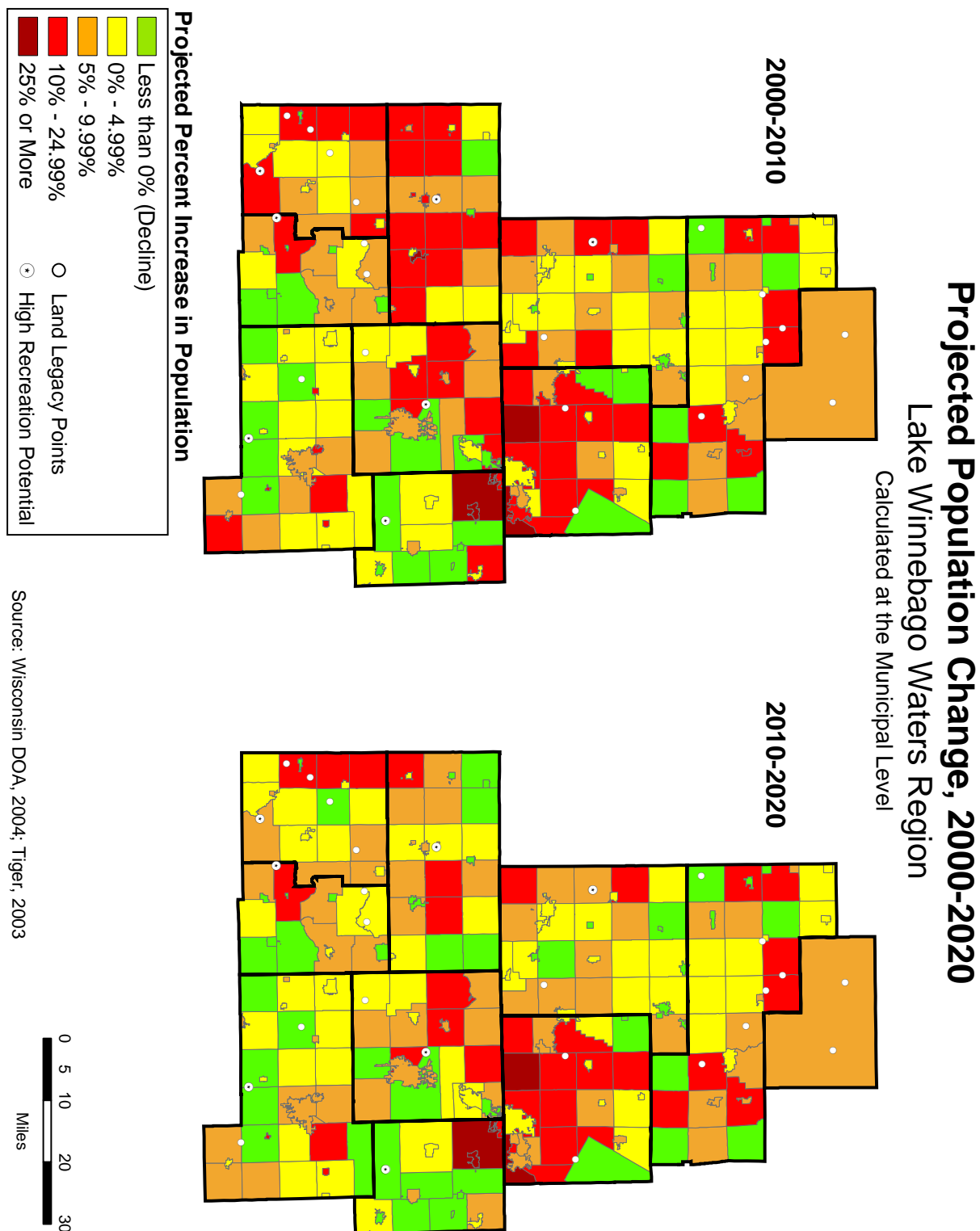
Applied Population Lab and Wisconsin Department of Natural Resources

Contact: *Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us*





Figure 18



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





AGE PROJECTIONS

As mentioned previously, the population in the Lake Winnebago Waters Region has a median age similar to the state of Wisconsin as a whole. Projections suggest that the Region will grow older over the next several years at a rate slightly faster than the state of Wisconsin (see Table 13). Population in Marquette, Menominee, and Waushara Counties is projected to age at a particularly quick rate.

By 2010, median age is projected to reach 38.5 years in the Lake Winnebago Waters Region and 46 years in Marquette and Waushara Counties. Menominee County is expected to remain the youngest county in the Region at 33 years in 2010.

Table 13
Median Age in the Lake Winnebago Waters Region, 2000-2010

	Observed 2000	Projected		Change	
		2005	2010	2000-2005	2005-2010
Calumet County	35	36	37	1	1
Fond du Lac County	37	38	39	1	1
Green Lake County	41	43	44	2	1
Marquette County	41	44	46	3	2
Menominee County	28	30	33	2	3
Outagamie County	34	35	36	1	1
Shawano County	39	40	42	1	2
Waupaca County	39	41	42	2	1
Waushara County	42	44	46	2	2
Winnebago County	35	36	37	1	1
Lake Winnebago Region	36.2	37.4	38.5	1.2	1.1
Wisconsin State	36.0	37.0	38.0	1.0	1.0

Source: Wisconsin Dept. of Administration, 2004

Projected Median Age is estimated from the D.O.A. age-specific population projections, 2004



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us





CONCLUSIONS

The Lake Winnebago Waters is a Region with mixed urban and rural populations. The Fox River Valley (the Appleton metropolitan area) strongly influences the Region. Yet, parts of the Lake Winnebago Waters Region (particularly Menominee, Marquette and Waushara Counties) remain rural and relatively isolated from urban influences. Within the Region, most people live around Lake Winnebago and in the Fox River Valley (Outagamie, Winnebago, Calumet, and Fond du Lac Counties). The Region has experienced steady population and housing growth over the last several decades (especially in the Fox River Valley) and is projected to continue to experience growth in the coming years.

In the Lake Winnebago Waters Region, housing values and education rates are relatively low, especially in the more rural areas. Median incomes are similar to the state median and highest in Calumet, Outagamie, Fond du Lac, and Winnebago Counties. Seasonal housing and tourism are an important component of demand for outdoor recreation in Menominee, Waushara, Marquette, and Green Lake Counties.

Based on the information shown in this report and from survey data that relates demographic characteristics to participation in outdoor recreational activities (NSRE 2000-2004), we can make some assumptions about the types of outdoor recreation that might be popular in the Lake Winnebago Waters Region. In the more urban parts of the Region, different activities may be more or less popular than in rural areas. In metropolitan areas swimming in outdoor pools, visiting dog parks to walk a pet, visiting outdoor theme/water parks, and attending outdoor concerts, plays, etc. may be particularly popular. In the more rural areas of the Region, ice fishing, snowmobiling, target shooting, driving for pleasure, driving off-road, driving ATV's, and gathering berries and other natural goods may be popular. People with relatively low education tend to participate more in snowmobiling and paintball games. People with relatively high educations disproportionately enjoy nature viewing and photography, walking for pleasure, mountain biking, visiting wilderness or primitive areas, golfing, visiting historic sites, sailing, canoeing, motorboating, visiting beaches, and/or bicycling.

It is important to note that in areas with a large contingent of seasonal housing, participation in outdoor recreation will be impacted by characteristics of seasonal residents, as well as full-time residents. Seasonal residents tend to differ dramatically from full-time residents, particularly in terms of income and education. Seasonal residents (usually clustered around lakes) might be expected to participate most in water-based activities.

National Survey on Recreation and the Environment (NSRE): 2000-2004. Versions 1-18 (except 12 & 17), N=2935. Interview dates: 7/99 to 11/04. The Interagency National Survey Consortium, Coordinated by the USDA Forest Service, Recreation, Wilderness, and Demographics Trends Research Group, Athens, GA , the Human Dimensions Research Laboratory, University of Tennessee, Knoxville, TN.



Applied Population Lab and Wisconsin Department of Natural Resources

Contact: *Richelle Winkler, Applied Population Lab, rwinkler@ssc.wisc.edu
Jeff Prey, Wisconsin Dept. of Natural Resources, Jeff.Prey@dnr.state.wi.us*

